DEPARTMENT OF THE INTERIOR

2025 Dragon Bravo Fire
Grand Canyon, Arizona
Significant Wildland Fire Review
August 2026



July 23, 2025: Dragon Bravo Fire as seen from the Bright Angel Trail on the South Rim of the Grand Canyon. Source: Lisa Jennings.

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EXECUTIVE SUMMARY

Overview

The Dragon Bravo Fire ignited on July 4, 2025, as a result of a lightning strike on the North Rim of Grand Canyon National Park (GRCA), and ultimately burned approximately 145,504 acres across National Park Service (NPS), U.S. Forest Service (USFS) and Bureau of Land Management (BLM) managed lands. The North Rim was geographically isolated, seasonally populated, and contained nationally significant historic structures, critical infrastructure, employee housing, and visitor facilities concentrated within a high fire risk Wildland–Urban Interface (WUI).

Following the initial response, the GRCA Superintendent, also working as Agency Administrator (AA) for the Dragon Bravo Fire[1], selected a confine and contain strategy in a Wildland Fire Decision Support System (WFDSS) decision issued on July 6, 2025. Wildland fires are formally documented in a WFDSS decision for the official record and are required for compliance with interagency policy. As the incident progressed, conditions deteriorated rapidly. Persistent drought, receptive fuels, and increasingly volatile weather contributed to escalating fire behavior.

WFDSS Key Suppression Strategies	
Full Suppression:	Action is taken to extinguish the fire entirely, often used when threatening high-value assets.
Confine and Contain:	Defines a perimeter to restrict the fire to a specific area (e.g., a "pod" or drainage) using natural or built barriers.
Point/Zone Protection:	Focuses on protecting specific resources, structures, or cultural values (e.g., in a "limited suppression" approach) rather than stopping the entire fire.
Monitoring/Area Management:	Allows the fire to burn to achieve beneficial ecological effects, while observing to ensure it does not cross defined, acceptable boundaries.

WFDSS User Guide

The confine and contain strategy was reaffirmed in successive WFDSS decisions dated July 9 and 11, 2025, without documented reassessment of strategy viability. Concurrently, the nearby White Sage Fire prompted visitor evacuations from the North Rim developed area, signaling elevated regional fire risk. During this period, the fire exceeded planned containment features, crossed the W1C Road designated as a control line, and demonstrated spotting and alignment-driven runs. The North Rim developed area, although increasingly threatened, was not fully incorporated into the WFDSS planning area or explicitly addressed as a priority value at risk.

Operational decision making was further complicated by delayed approvals for suppression tools, including mechanized equipment and retardant, and by fragmented communication among incident command, park leadership, and interagency partners. Although additional firefighting resources were available within the broader regional and national system, they were not ordered at a scale or tempo that matched the evolving risk and complexity of the incident during its critical early periods. Although indicators in the July 11, 2025 Wildland Fire Risk and Complexity Assessment suggested the incident had exceeded local capacity, the fire continued to be managed as a Type 3 incident until early on July 14, 2025.

Between July 11 and July 13, 2025, fire behavior intensified dramatically, resulting in the loss of multiple structures, including the historic Grand Canyon Lodge, employee housing, and other critical infrastructure. A Complex Incident Management Team (CIMT) was ordered after significant impacts had

[1] Throughout the report where the Superintendent was concurrently performing the role of Agency Administrator for the Dragon Bravo Fire the report will use the term “Superintendent/AA”. Where those roles were performed independently, the terms “Superintendent” and “AA” will be used, as appropriate.

occurred. Multiple CIMTs managed the incident and oversaw suppression, stabilization, and recovery operations through full containment on September 29, 2025[2]. The estimated total suppression costs were $141,047,987.

KEY FOCUS AREAS

At the direction of the Deputy Secretary of the Interior, this review examined the Dragon Bravo Fire with particular attention to the key focus areas discussed below. The report is organized by the major themes observed by team members throughout the review process, with findings and recommendations nested within the appropriate theme. The findings indicated many of the challenges observed during the fire were foreseeable, preventable, and reflective of broader institutional issues that extend beyond a single park, region, or agency.



July 31, 2025: Hotshot Medic monitors fire activity.

While extreme fire behavior and drought conditions were contributing factors, this review concluded the most consequential drivers were not environmental. Rather, the incident exposed systemic weaknesses in NPS fire leadership governance, decision authority, preparedness, interagency coordination, and compliance that constrained effective response.

This report does not attribute fault to individual employees acting under difficult and time-compressed conditions. Instead, it identifies structural, policy, and governance issues that limited leadership effectiveness and decision quality at critical moments, and it provides recommendations intended to strengthen wildfire management across the Department of the Interior (DOI) and its interagency partners.

Fire Readiness

This review examined pre-fire readiness conditions, including weather, fuels, topography, and the fire planning framework applicable to GRCA and the surrounding interagency landscape.

Findings across Themes 6 and 7 indicate the Dragon Bravo Fire ignited under well-documented conditions of persistent drought, receptive fuels, and complex terrain characteristic of the North Rim. These conditions were known prior to ignition and were consistent with elevated regional fire danger. The North Rim developed area contained dense fuels in close proximity to nationally significant historic structures, employee housing, visitor facilities, and critical infrastructure within a high-risk WUI.

Fire response planning and policy documents existed, including fire management plans, interagency agreements, and national guidance. However, findings demonstrate these plans were not fully translated into effective preseason preparedness actions or operational readiness. Deficiencies in fuel reduction, structure hardening, identification of values at risk, and pre-authorization of suppression tools constrained decision space once the fire escalated.

Theme 5 identifies an additional readiness gap: insufficient preseason leader's intent and communications guidance contributed to a lack of internal alignment on fire-strategy terminology.

[2] See Appendix A for Timeline

Initial Response to the Fire

The review assessed leadership actions, delegations of authority, the approved course of action, decision processes, and the role of policies and plans in informing initial decision making. Themes 1, 2, and 7 collectively address this area.

AA qualification, availability, and delegation of authority impacted the initial response. Required delegations were not issued or updated as management strategy and incident complexity changed, resulting in Incident Commanders (IC) operating without clear authority during critical early periods. The confine and contain strategy was approved early in the incident through WFDSS, but findings show the decision process lacked documented reassessment as conditions changed and did not fully incorporate available policy guidance, national fire posture, or interagency input. Required communication pathways under the National Incident Management System (NIMS) and the Incident Command Structure (ICS) were not consistently followed. This may have contributed to fragmented information flow and delayed decision making.

Theme 5 explored the role of public communications during the incident.

Health and Safety Management Aspects of the Incident

This area focused on structure and infrastructure exposure risk, hazardous materials (HAZMAT) considerations, and evacuation planning and execution.

Findings within Themes 4, 6, and 7 demonstrate health and safety management was challenged by the proximity of dense fuels to structures and infrastructure, limited pre-incident risk reduction, and delayed operational decisions. Structure protection considerations were not clearly prioritized in early decision documents, and suppression tools that may have reduced exposure were delayed or constrained. Suppressing a wildfire in a complex wildland urban interface may have led to health and exposure risks for personnel that may not have been considered in planning or mitigated during operations.

Evacuation actions were effective in removing visitors and residents from immediate danger. However, findings showed evacuation decisions were made under compressed timelines and, at times, outside formal command structures due to leadership availability constraints and unclear authority. These conditions increased reliance on ad hoc decision making rather than planned, policy-aligned safety management processes.

Strategies Utilized to Manage the Incident

The review evaluated protection goals, success in meeting objectives, cooperation and coordination, strategic decision-making roles, and the availability and use of wildland fire resources. This area is addressed across Themes 1 through 7.

Strategic alignment between documented objectives and operational execution deteriorated as conditions worsened. The confine and contain strategy was repeatedly reaffirmed by staff on scene without clearly factoring in the increasing fire behavior, loss of control features, and threats to the North Rim developed area. Findings showed the strategy, resource ordering, and approvals for some suppression tools did not consistently match the pace and scale of changing fire behavior, may have contributed to significant impacts to structures and infrastructure.

Interagency coordination with the Kaibab National Forest (KNF) did not align with established agreements, resulting in the exclusion of available expertise during critical decision windows. Resource availability, including additional firefighting assets and suppression tools such as retardant, were constrained by delayed ordering and GRCA approval processes, even as resource availability remained sufficient.

Themes 4 and 6 highlight how firefighters and incident personnel performed effectively under hazardous conditions while their ability to meet protection objectives may have been limited by upstream leadership, planning, and coordination challenges rather than by operational execution alone.

Cost-Effectiveness and Business Management

Cost management actions and financial oversight were reviewed as part of this assessment and did not identify adverse findings. Decisions regarding expenditures were generally appropriate within the context of life safety, firefighter safety, and protection of values at risk. Increased costs associated with the incident were driven by escalating fire behavior, delayed strategic escalation, and the eventual need for higher complexity response, rather than by wasteful or unjustified spending. However, it must be acknowledged that the decision to manage the initial ignition under a confine and contain strategy and the subsequent escape of the fire led to significant costs commensurate with a wildland megafire.

Accordingly, no corrective actions specific to cost management or financial oversight were developed.

CORE CONCLUSIONS

Based on the analysis conducted by the review team, the Dragon Bravo Fire Significant Wildland Fire Review (SWFR) determined five core conclusions that are explored in more depth within the themes, findings, and recommendations within the report.

- Leadership qualifications, authority, and availability on site were not aligned with incident complexity.
- Decision authority and delegation at the scene did not keep pace with changing environmental factors, fire behavior characteristics, and incident complexity.
- National fire posture and direction were not clearly conveyed, understood, and enforced by those on scene.
- Interagency partners were not fully integrated into planning and decision making as required by agreement and best practice.
- Pre-incident risk reduction, compliance, and operational readiness did not support suppression under extreme conditions.

As a result, decision making during the Dragon Bravo Fire was frequently delayed, fragmented, or not aligned with national intent and events on the ground. Critical values at risk, including employee housing, visitor facilities, and infrastructure, were not consistently identified, prioritized, or protected within formal decision frameworks. These factors narrowed firefighting options as conditions deteriorated.

PATH FORWARD



July 13, 2025: Grand Canyon Lodge entrance engulfed in flames.

The Dragon Bravo Fire should be understood as a warning event. The findings demonstrate outcomes were shaped less by tactical execution than by NPS systemic issues related to authority, qualifications, and decision processes. Addressing these issues will require reinforcing readiness, delegation and documentation discipline, and ensuring national fire posture and leader's intent are clearly communicated, acknowledged, and operationalized by those on site.

Equally important will be improving preparedness and integration in high risk WUI environments. Structural protection, wildland fire operations, facilities, utilities, safety, evacuation planning, and communications must function as a coordinated system before incidents occur. Advancing integrated, preseason planning and clarifying decision authorities, delegations of authority, and suppression tool availability may reduce time-critical friction and expand safe response options during rapidly evolving incidents.

While several corrective actions are specific to GRCA, the underlying issues identified in this review may be broadly applicable across organizations with responsibility for wildland fire management. Implementing the recommendations in this report provides an opportunity not only to strengthen wildfire management at GRCA, but to modernize leadership, decision governance, and preparedness systems to better meet the increasing complexity and consequences of wildland fire.

PURPOSE, SCOPE, AND METHODOLOGY

A full DOI SWFR was conducted of the Dragon Bravo Fire. This completed SWFR has incorporated all interviews, document reviews, technical assessments, and contextual information gathered by the interagency review team.

Purpose

The purpose of the SWFR was to conduct an independent, comprehensive, and fact-based examination of the Dragon Bravo Fire. Consistent with the intent of DOI Office of Wildland Fire (OWF) Policy Memo (PM) 2016-013 and NPS Reference Manual (RM) 18, the review evaluated decision making processes, risk management practices, operational actions, interagency coordination, and the performance of systems and protocols during the incident. The review was initiated pursuant to the delegation memorandum from the Deputy Secretary, which directed the team to examine key focus areas including decision making, preparedness, risk assessment, communication and coordination, and post-fire recovery considerations.

Scope

On October 30, 2025, the Deputy Secretary of the Interior issued a memorandum directing the NPS to initiate a SWFR of the Dragon Bravo Fire and designating BLM Arizona State Director Raymond Suazo as the Team Lead. The review encompassed the full duration of the Dragon Bravo Fire from ignition on July 4, 2025, and relevant events leading up to ignition, through containment on September 29, 2025. The review covered actions and decisions by the NPS, the USFS, cooperating agencies, concessionaires, and incident management teams engaged throughout the event.

The Deputy Secretary's memorandum identified five key focus areas for the review:

1. Fire Readiness
    a. Pre-fire weather conditions.
    b. Fuel conditions and topography.
    c. Fire response plan and fire policies/procedures relevant to the National Park unit.
2. The initial response to the fire.
    a. Leadership and delegations of authority to assess direction and protection goals.
    b. The approved course of action and decision process.
    c. The policies and plans in place and their role in informing real time decision-making for initial fire response.
3. The safety management aspects of the incident.
    a. Structure/infrastructure interrelation to the wildfire.
    b. Hazardous materials interrelation to safely managing the incident.
    c. Evacuation process, plans, and effectiveness.
4. The strategies utilized to manage the incident.
    a. Protection goals and success in meeting objectives.
    b. Cooperation and coordination (e.g., internal, interagency, intergovernmental).
    c. Strategic decision-making roles, process, and relation to policy and plans.
    d. Availability and dispatch of wildland fire resources, including but not limited to, the use of fire retardant in structure protection.

5. The cost-effectiveness and business management.
    a. Cost management actions that were implemented.
    b. Roles of financial oversight.

Consistent with PM-2016-013 and RM-18, the scope of this SWFR included:

- Review of operational and strategic decisions from ignition (July 4, 2025) through 100% containment (September 29, 2025).
- Examination of preparedness, planning, risk analysis, and policy compliance prior to and during the incident.
- Assessment of cross-boundary coordination between NPS, BLM, USFS, Arizona Department of Forestry and Fire Management (AZ DFFM), local fire departments, concessionaires, and cooperating partners.
- Evaluation of organizational performance in areas including incident management, structure protection coordination, evacuations, public information, safety, and interagency communications.
- Review of Incident Management Team (IMT) transitions, WFDSS decisions, and the operational shift from initial attack through extended operations, repair, and closure management.
- Assessment of financial management, cost controls, and decision documentation.

Limitations

This review does not constitute a law enforcement investigation, personnel inquiry, or fault-finding process. Consistent with Departmental guidance, it has focused on systemic and organizational learning to improve future outcomes.

Methodology

The review team used a multi-source, interdisciplinary methodology consistent with DOI OWF PM 2016-013, NPS RM-18, and the DOI Wildland Fire Program Review Guide. The methodology included:

- Interviewed 70+ personnel from NPS, USFS, incident management teams, cooperators, concession partners, and external stakeholders. Interviews were conducted between November 2025 and January 2026.
- Reviewed over 18,000 documents, including:
    - WFDSS decision records from July 4 through September 29, 2025
    - Dispatch logs, resource orders, transition plans, Incident Status Summaries (ICS-209s), and situation reports
    - Reviewing structural fire, HAZMAT, and infrastructure-related documents including engineering reports, safety memos, water system assessments, and structural protection plans
    - Preseason plans, fire management plans, annual operating plans, delegations of authority, policy documents, and risk assessments relevant to the North Rim and surrounding jurisdictions
    - Geospatial data, fire behavior modeling outputs, predictive services products, and weather indices that influenced planning and operations
    - Communications (Teams messages, texts, email, etc.) between personnel involved

- Conducted comparative analysis between documented decisions, actual actions taken, and interview accounts to ensure factual alignment and discrepancy identification.

This methodology ensured the review was grounded in verified information, supported by multiple independent sources, and consistent with DOI and NPS standards for serious incident reviews. The findings and recommendations that follow are based solely on evidence contained in the reviewed materials, interviews, and technical assessments.

In addition to these materials, the review team examined a broad range of foundational program documents necessary to evaluate the structural fire, wildland fire, preparedness, and risk-management environment at GRCA. These included the:

- 2021 GRCA Structural Fire Management Plan (SFMP)
- 2024 Structural Fire Program Assessment
- GRCA Wildland Fire Preparedness Reviews (2021, 2022, 2023, 2024, & 2025)
- 2022 GRCA Safety, Health and Wellness Program Review
- NPS Reference Manual 58 and appendices governing structural fire program requirements
- Applicable NPS and interagency fire management policy (including RM-18 and PM-2016-013)
- All structure, infrastructure, and HAZMAT related materials provided by NPS, USFS, and cooperating entities.

Cited fire related positions and roles have been published on the NWCG website in the NWCG Position Catalog (https://www.nwcg.gov/positions/position-catalog). All times are reported using the 24-hour clock in local time.

For purposes of consistency and clarity, all fire-related technical terminology used in this report have been defined in accordance with the National Wildfire Coordinating Group (NWCG) Glossary of Wildland Fire (PMS 205), which serves as the authoritative reference unless otherwise noted.

Review Team

The following team members were assigned to the Dragon Bravo Fire SWFR:

Team Lead
Raymond Suazo – BLM Arizona, State Director

Deputy Team Lead
Gerald Davis – BLM Arizona, Deputy State Director for Resources and Planning

Resources/Communications
Amber Cargile – BLM Arizona, Branch Chief for Recreation, Cultural, & Planning

Agency Administrators (AA)
Amanda Roberts – BLM Oregon, District Manager
Chris Carlton – USFS, Deputy Regional Forester
Amelia Taylor – BLM New Mexico, Project Manager
Rachel Birkey – USFS, Forest Supervisor

Fire Management Officers (FMO)
Chris Delaney – U.S. Wildland Fire Service (USWFS), State FMO, Utah
Mike Spilde – U.S. Wildland Fire Service (USWFS), State FMO, Arizona

Fire Business & Finance
Casey O'Connell – U.S. Wildland Fire Service (USWFS), Budget Analyst, Idaho
Molly Keating – U.S. Wildland Fire Service (USWFS), Program Analyst, Idaho

Structure Fire
Jayson Coil – Sedona Fire District, Assistant Chief, California

Fire Operations
Todd Abel – Arizona DFFM, Deputy State FMO for Operations

Writer/Editor
Cheryl Cramer – U.S. Wildland Fire Service (USWFS), Payment Specialist, Idaho

Safety/Chief Investigator
Matthew Ringer – BLM Colorado, State Safety Manager

Industrial Hygiene
Kathleen DuBose – U.S. Wildland Fire Service (USWFS), Environmental and Occupational Health Program Director, California

INCIDENT SUMMARY AND CHRONOLOGY

Incident Summary

The Dragon Bravo Fire was discovered on July 4, 2025, in the GRCA, about 2.6 miles northeast of the North Rim developed area[3]. It was ignited naturally by a lightning strike and was located within the footprint of the previous 2005 Dragon Complex (a group of multiple fires), as well as within the footprint of the planned Outlet prescribed fire unit proposed for Fall 2027. The fire expanded gradually from approximately 0.25 acres to 943 acres by July 11 under a confine and contain strategy, initially burning through ponderosa pine and mixed conifer fuels.

Remote Automatic Weather Station (RAWS) observations and forecasts indicated an increasing fire weather risk window for low relative humidity and gusty winds on July 10-11. A critical drying trend and wind gust potential were forecasted. Concurrently, on July 10, a surge in activity on the White Sage Fire (approximately 40 miles to the northwest) led to the evacuation of visitors within the North Rim developed area. On the afternoon of July 11, a shift in wind direction and an increase in speed caused the fire to rapidly intensify. This surge in activity led to the evacuation of employees, and concession staff, and necessitated urgent, large-scale life-safety measures, including the destruction of structures and equipment, and exposure to HAZMAT. On July 13, the fire burned 4609 acres and the fire management strategy changed to full suppression.

Table 1: Dragon Bravo Fire Reported Acres and Key Weather Forecast Metrics, July 4-13

Date	Time / Reported Acreage	High / Low (f) Temp.	20-foot wind direction / speed (mph)	Relative Humidity (Maximum/ Minimum)	Weather Notes
Fri., July 4	1227 / 0.25 acres	87 / 49	SW / 10-15 day SW / 10-15 night	14-19% day 50-70% night	Forecasted chances of low precipitation mostly east of Flagstaff. Relative humidity trending 10% drier for next 24 hours.
Sat., July 5	1255 / 0.26 acres	89 / 52	SW / 10-15 day W / 10-light night	11% day 39% night	Warming trend identified for next several days with mostly dry conditions.
Sun., July 6	1126 / 2.7 acres 1643 / 9.7 acres	91 / 54	SW / 10 day SW / 10-15 night	10% day 38% night	Warming temperatures and mainly dry conditions.
Mon., July 7	1124 / 15.4 acres 1536 / 22.4 acres	94 / 52	SW / 10-15 SW / 10-light night	13% day 48% night	Gusty winds predicted for 07/10-11.
Tues., July 8	1253 / 27 acres	96 / 56	W / 10 day W / 10-light night	17% day 51% night	Hot and dry conditions continued.
Weds., July 9	1212 / 59 acres	97 / 57	W / 10-15 day W / 10-light night	14% day 38% night	Breezy winds on 07/10 out of the west at 10-20 mph gusting to 35 mph; winds a bit calmer on 07/11.
Thurs., July 10	360 acres*	96 / 48	W / 10-15 day SW / 10-15 night	6% day 35% night	Localized critical fire weather today in the Little Colorado River Valley

[3] See Appendix B for Maps

					with low humidity and a few gusts over 35 mph.
Fri., July 11	0930 / 352 acres **1540 / 941 acres	95 / 51	W / 10 day SW / 10-15 night	6% day 60% night	Hot and mostly dry.
Sat., July 12	1745 / 3471 acres ***	96 / 58	W / light-10 day NW / 10-15 night	7% day 40% night	Hot and mostly dry. West through northwest afternoon winds at 10-15 mph today and Sunday.
Sun., July 13	1841 / 4609 acres (per progression map)	98 / 61	NW / light-10 day NW / 10-15 night	13% day 38% night	Slight chance of mainly dry thunderstorms and possibly a brief shower over the higher terrain each afternoon. Winds west/northwest 5-15 mph, with gusts to around 20 mph each afternoon.

*Indicated on the 209 dated July 4-10.
**Indicated in interviews.
***Indicated on briefing maps.

From July 4 to the morning of July 14, seven different ICs managed the fire, with the first CIMT assuming control on July 14.

Table 2: Chronology of Incident Commanders and Incident Management Teams

Date	Time	Incident Commander	Incident Complexity/Incident Management Team
Fri. 7/4	1525	IC Kruger	Type 5
Sun. 7/6	1022	IC Beam/IC T Barberena	Type 4
Tue. 7/8	0700*	IC Pedraza*	Type 4
Wed. 7/9	1212	IC Flanagan/IC T Knudsen	Ad-hoc Type 3
Sat. 7/12	0856	IC Lemmon	Ad-hoc Type 3
	1949	IC Causer	Northern AZ Type 3 Team
Mon. 7/14	0600	IC Mandell	Southwest CIMT 4
Mon. 7/28	0600	IC Truett	Southwest CIMT 2
Mon. 8/11	0600	IC Johnston	Great Basin CIMT 7
Sun. 8/24	0600	IC Gould	California CIMT 6
Tue. 9/2	0600	IC Rau	Southwest CIMT 3
Tue. 9/23	0600	IC Erickson	Wyoming Type 3 Team

IC – Incident Commander; IC T – incident commander trainee
*Documented by interview, not documented in WildCAD or ICS-209.

Multiple CIMTs oversaw suppression, stabilization, and recovery operations until the fire was fully contained on September 29, 2025. Ultimately, the Dragon Bravo Fire burned approximately 145,504 acres across lands managed by the NPS, USFS, and BLM. It also damaged or destroyed significant infrastructure within the North Rim developed area, necessitating extended suppression, stabilization, and recovery efforts.

Significant events that led to critical fire operational days on July 11-14 are described below along with key events from when the first CIMT took command of the fire until full containment on September 29.

Relevant Background Information

July 2, 2025 – Point Fire (2025-AZGCP-000587)

The Point Fire started due to a lightning strike, 4.63 miles from the eventual ignition location of the Dragon Bravo Fire. This small fire was fully suppressed. Resource concerns, socio-political impacts, and inadequate containment features for a confine and contain strategy were considerations for the decision to fully suppress the Point Fire.

The National Park Service Mission

The National Park Service Organic Act of 1916 established their mission, "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." Unlike other land management agencies under the Department of Interior that require lands to be managed for "use and productivity," the NPS has a "preserve and protect" mandate, requiring additional considerations in fire management to preserve "…unimpaired the natural resources."

Wilderness

There is no congressionally designated wilderness within the GRCA. As required by NPS Management Directives, in accordance with the Wilderness Act, the NPS submitted a recommendation for eligible portions of GRCA to be considered for wilderness designation to the DOI in 1980 (which was updated in 1993 and again in a 2010 draft). This recommendation was never forwarded to Congress or the White House for action. As a result, lands within GRCA, including the area north of the Grand Canyon encompassing much of the North Rim and Kaibab Plateau, are not formally designated as wilderness yet require special management considerations. These considerations require GRCA to "take no action that would diminish the wilderness eligibility of an area possessing wilderness characteristics," this created complexities in management decisions and actions.

The NPS Director's Order 18 states, "[i]f a compromise of wilderness resources or character is unavoidable, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts will be acceptable, unless human life is threatened." NPS fire management policy explicitly applies to designated, recommended, and potential wilderness alike and allows for the specifically authorized use of mechanized equipment and aviation resources when necessary to protect human life, developed areas, critical infrastructure, sensitive resources, or adjacent lands. This includes application of the "minimum tool" concept, as defined by the Wilderness Act. The GRCA 2025 Fire Management Plan (FMP) reflects this requirement for the preservation of wilderness character.

Within the North Rim, the 2010 update of the GRCA Final Wilderness Recommendation recognized extensive wilderness values, particularly in the Kaibab Plateau's forested ecosystems, while also deliberately retaining non-wilderness corridors associated with existing roads, utilities, developed areas, and the cross-canyon transportation and trail network. Fire management, prescribed fire, and wildfire response has long been an anticipated and integral management activity in these areas. This includes the use of helicopter access for suppression, which is expressly contemplated in the NPS wilderness planning for the North Rim.

Accordingly, while wilderness character considerations were relevant to situational awareness, stewardship values, and decision making during the Dragon Bravo Fire, the recommended wilderness status did not preclude or legally constrain available fire management strategies or

tactics, including the use of aviation resources (e.g., retardant), mechanized support, or aggressive actions necessary to protect life, infrastructure, and adjacent lands.

Core Role Definitions

For the context of this report, the definitions of certain core roles have been listed below.

Superintendent: The Superintendent is the top-ranking manager delegated line authority for a specific national park unit, responsible for directing all operations, staff, and budgetary decisions to protect natural/cultural resources and manage visitor services.

Agency Administrator (AA): The official fire management position responsible for the management of a geographic unit or functional area. The managing officer of an agency, division thereof, or jurisdiction having statutory responsibility for incident mitigation and management. Examples: Federal Line Officer, State Forest Officer/Delegate or Fire Manager, Tribal Chairperson, Fire Chief, Police Chief, Sheriff, Mayor or County Representative. This aligns with the AA qualification in Incident Qualifications and Certification System (IQCS), which is annotated by AADM.

AAs play a critical role on site in ensuring fire management decisions are informed by jurisdictional expertise. AAs maintain a broad understanding and jurisdictional authority for the management of local resources, land uses (oil & gas, energy development & transmission, pipelines, grazing, mining, recreation, etc.), values at risk, political considerations, and partnerships enabling them to make more timely and well-informed decisions. They are instrumental in assessing acceptable risk, considering the broader geopolitical context, maintaining relationships with local elected officials and tribes, and ensuring compliance with laws, policies, and land use plans. For NPS, the national park superintendent generally serves as the initial AA for local fires until other resources are requested by the incident or situation.

Fire Management Officer (FMO): The official position with oversight of a park's fire management program. The FMO supervises fire management staff. They must be knowledgeable about firefighting tactics as well as goals and objectives to be achieved through the park's fire management plan, which outlines wildland fire response and use in a park.

Incident Commander (IC): The individual responsible for on-scene incident activities, including developing incident objectives and ordering and releasing resources. The IC has overall authority and responsibility for conducting incident operations through a Delegation of Authority.

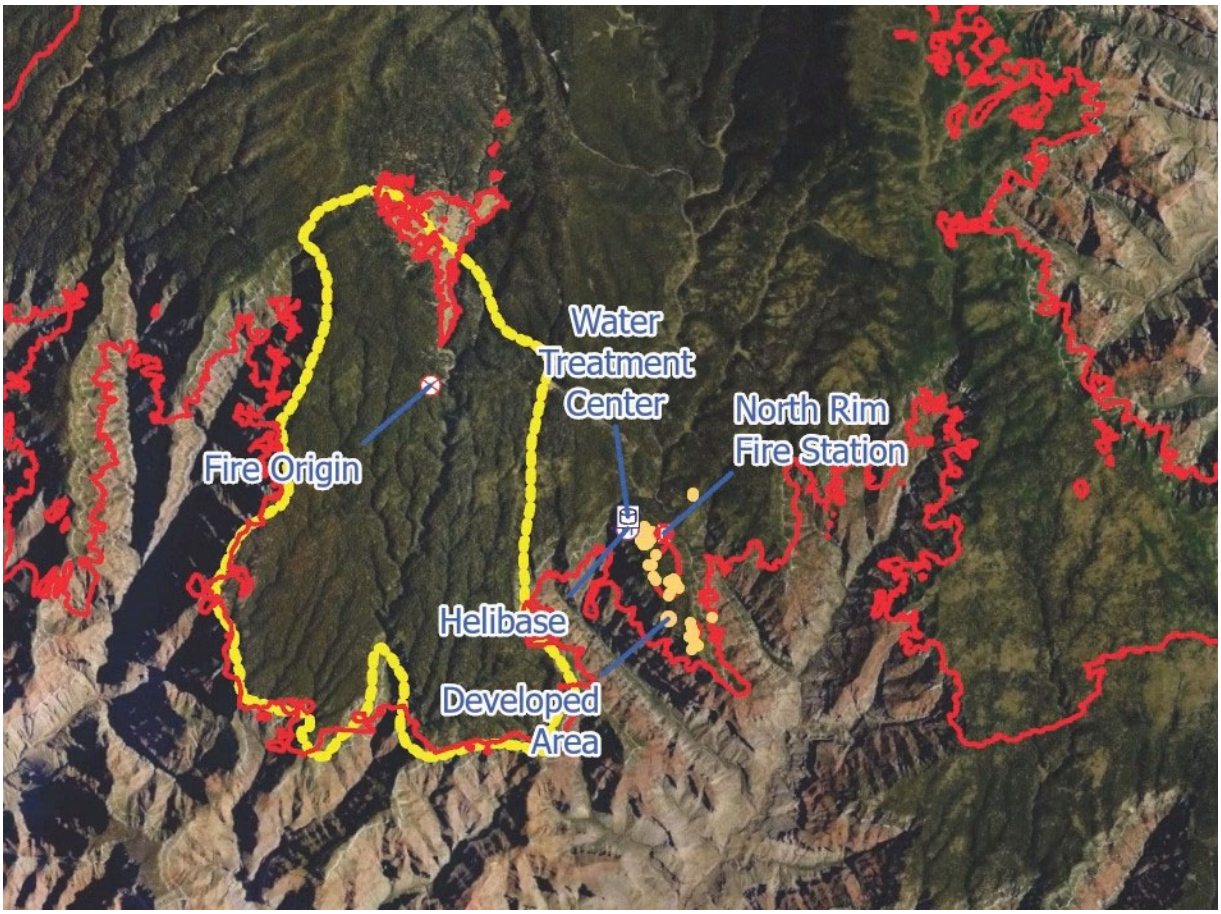
Dragon Bravo Fire Chronology – Significant Events by Day

See Appendix B. Dragon Bravo Fire Maps for full depictions of the fuels treatment and fire history of the area, the Dragon Bravo Fire progression map, and detailed maps showing the impacted structures and hazardous materials location.

July 4: The Dragon Bravo Fire (2025-AZGCP-000597), ignited by lightning, began on the North Rim of GRCA. Initially detected by a reconnaissance flight, it was estimated to be 0.25 acres in size and burning in a ponderosa pine stand. Fire behavior consisted of smoldering and creeping through ground fuels with limited road access. Initial attack resources consisted of two engines and a Battalion Chief who responded promptly with the direction from the North Zone Duty Officer (DO) to utilize full suppression efforts. This decision to suppress the fire was made by the North Zone (DO) and North Zone FMO, with agreement from the GRCA Fire DO.

Later in the operational period and after discussions with the North Rim Manager, a decision was made for monitoring the fire and employing a confine and contain strategy. This intent was relayed to the initial attack resources, and they suspended full suppression efforts. The GRCA Superintendent and the Visitor and Resource Protection Chief were briefed on the fire's location, size, and the potential plan for a confine and contain strategy, although a published WFDSS decision with this strategy would not be completed for an additional operational period. There was no published WFDSS decision as of this date.

July 5: Initial attack resources returned to the ignition site to monitor the fire and assess conditions. No significant fire growth was reported as the fire was creeping and smoldering. Air resources also conducted a reconnaissance flight.



Grand Canyon North Rim developed area detailed map. Yellow outline = Dragon Bravo Fire initial planning area (same as the Outlet Fire Prescribed Fire planning area). Red outline = final Dragon Bravo Fire perimeter. Created for the Dragon Bravo Fire SWFR.

July 6: Warming and drying trends continued, fire activity moderately increased and the fire grew to 9.7 acres. The first WFDSS decision for the Dragon Bravo Fire was published, documenting a confine and contain strategy. The GRCA Superintendent signed this decision as the AA. In this WFDSS decision, it was reported, “Almost the entire planning area, 9,630 acres, is a proposed prescribed fire unit in FY28 (fall of 2027)”.

Assigned resources continued monitoring the fire with no direct suppression actions taken. Fire behavior was meeting resource objectives and was reported to be creeping and backing with single tree torching.

July 7: The fire continued to grow gradually under warming, drying conditions. Two engines and one wildland fire module were ordered. Preparation began for containment lines along the W1 and W1C Roads and Widforss Trail.

GRCA leadership and fire management staff reaffirmed their intent of confine and contain strategy for managing the fire. It was relayed to KNF staff this strategy would be used with the intent to prepare containment lines and burn the unit within the planning area boundary. It was stated by the GRCA FMO, “this will not be a let's see if the fire makes it to the road, we are going to be a little more heavy handed on this one and make the burn unit black and get it off the books”. Multiple interviews reflected that GRCA fire management staff held their discussions without the KNF. This potentially excluded dissenting opinions from the discussions and may have reinforced the decision to utilize a confine and contain strategy. USFS North Zone FMO and District Ranger noted a lack of coordination, and recommendations from USFS were not adopted in early decision making on fire management strategies.

GRCA public affairs staff posted on social media channels the 10-acre fire was being “managed for resource objectives.” This information was consistent with the leader’s intent and the July 6 WFDSS decision which noted “100% confine and contain” (not full suppression) as the selected management strategy. The NPS Fire Director learned that the fire was being “managed for resource objectives” through the social media post. The NPS Wildland Fire Branch Chief reached out to the park and region FMOs to emphasize that, per his preseason memo, “we [NPS] are not managing fires”. There is no record that this message was conveyed to the GRCA Superintendent/AA.



August 7, 2025: Sunset over the Dragon Bravo Fire.

July 8: Hot and dry weather conditions persisted, and firefighters continued preparing containment lines to support the confine and contain strategy. The record indicated some GRCA fire management staff were not certain incident resources were keeping pace with the operational tempo needed to meet objectives.

July 9: Fire activity increased as evidenced by fire spotting, group tree torching, and fire consumption of thick heavy fuels. The east flank of fire was within 150 feet of the bottom of Outlet Canyon. At

this time, FSpro fire behavior modeling results indicated a 2-4% chance of fire spread impacting the North Rim developed area. Hot, dry, and windy conditions were expected to continue. Without a formal in-briefing from the AA, a Type 3 IC took command of the fire and an ad-hoc Type 3 IMT assembled from local personnel.

The updated WFDSS decision, signed by the Superintendent/AA, maintained the same confine and contain strategy while using fire to enhance the ecological health of the landscape. An internal email circulated stating the weather and fire behavior sections and highlighted a predicted wind event for July 9–10 that could increase rates of fire spread from low/moderate to moderate/high. This WFDSS decision did not identify the fire's proximity to the North Rim developed area, 2.5 miles away, excluding considerations for the potential infrastructure impacts.

Pressure increased to complete the containment line preparation without an increase in operational tempo. Working within the GRCA management structure, the IC's request to authorize the use of mechanized equipment (UTVs) to support fire operations did not reach the Superintendent/AA in a timely manner. This request was made via email to the North Rim Manager and Deputy Chief for Science & Resource Management but was not formally communicated to the Superintendent/AA until July 11.

GRCA public affairs staff posted on social media channels the 27-acre fire "continues to be managed for resource benefit objectives using a confine and contain strategy."

The White Sage Fire started 41 miles away.

July 10: The fire continued to grow from 59 to 150 acres in dense fuels, spotted across Outlet Canyon and was approximately 1.6 miles from the North Rim developed area. Hot, dry conditions continued with high likelihood of increased fire behavior. There was no documented change in operational strategy. The weather forecast for the day noted, "localized critical fire weather today in the Little Colorado River Valley with low humidity and a few gusts over 35 mph."

The operational plan on July 12 was to set fire to unburned fuels (vegetation) between the control lines (such as the W1 road) and the advancing fire. Because of the activity occurring on the White Sage Fire to the north, the North Zone FMO sent two engines and one bulldozer to assist with suppression efforts on that fire. Additional resource orders were placed for the Dragon Bravo Fire for two Type 6 engines and one Type 2IA hand crew.

From 1116 – 1140, GRCA fire staff flew a reconnaissance flight over the fire area. Following the reconnaissance flight, around 1200, the IC directed the Wildland Fire Module off the fire line due to increased fire behavior and safety concerns. Interviews noted the potential for weather conditions on July 11 to present challenges in managing the fire, though the timing and specificity of these concerns varied between accounts.

The neighboring White Sage Fire continued to double in size daily and prompted the closure of State Hwy 89A. At approximately 1800, the White Sage Fire IC advised the Coconino County Emergency Management to issue an order to evacuate an estimated 500 visitors of Grand Canyon North Rim. A GRCA leadership call at 1726 discussed visitor evacuation coordination and an IMT to manage the evacuation. Employee notification communicating the visitor evacuation was sent via the Everbridge system (an internet-based emergency messaging system that sends emails, automated telephone calls and SMS messages to all recipients included within the system) by GRCA staff at approximately 1812. GRCA North Rim Staff were mobilized and at 1900 several South Rim law enforcement officers were flown over via the GRCA helicopter to assist with the evacuation. Visitor evacuations (ordered by the White Sage Fire, not the Dragon Bravo Fire) continued through the night and were completed the morning of July 11.

The first ICS-209 was submitted. Information on the ICS-209 provides the mechanism for how firefighting resources are assigned and prioritized. This form indicated a confine and contain strategy and “no evacuations imminent.” The North Rim developed area was not identified as a “Value” to be at risk from the fire. The ICS-209 identified two "other minor structures” threatened in no more than 72 hours.

GRCA public affairs staff posted two items on social media channels on July 10. The first post stated the 120-acre fire was being managed with a “confine and contain strategy, which allows for the natural role of fire on the landscape while minimizing the risk to infrastructure and park values.” The second post was a park alert regarding the visitor evacuations associated with the nearby White Sage Fire. The park alert stated, “Please note: this fire is not related to the Dragon Bravo Fire, a lightning-caused fire being managed for resource objectives south of the Basin.”

July 11: Fire activity significantly increased, and the Dragon Bravo Fire went from a controlled scenario to an emergent life-safety and structure-protection scenario by the end of the day. Per WildCAD entry at 1030, the IC stated, “No control problems”. From a morning recon flight, the fire was mapped at 359 acres with an active perimeter of 80%, with about 10-15 acres burning on the east side of Outlet Canyon. At 1130, the IC trainee noted increased fire activity.

Mid-morning GRCA fire management staff again requested the use of UTVs due to concerns of changing and drying conditions, lack of monsoon moisture and activity of fires in the area. The North Rim Manager and the Visitor and Resource Protection Chief gave their concurrence by 1120, however acknowledged this could only be formally approved by the Superintendent.

A new WFDSS decision was signed and published at 1329 stating the fire size was 150 acres. This conflicted with the July 10 report where the fire was reported to be 360 acres. This decision reaffirmed the 100% confine and contain strategy and did not include the North Rim developed area in the identified Organization Assessment Relative Risks (PMS-236 Part C/D), which excluded the developed area from the risk analysis and operational response planning. All assessment areas within the document were either low or moderate risk potential.

By mid-afternoon, the wind shifted and fire activity increased leading to fire line resources disengaging for their own safety. At 1430, the IC trainee noted, “the fire made another pulse towards the line which created more spot fires. Resources were unable to catch these spots [fires] due to the increasing fire behavior and rapid growth of spots in the receptive fuels that were taking and spreading quickly.” By 1530, the fire crossed the W1C road, an established containment line, and was actively moving east. At this time, fire resources moved to structure protection and defense in the North Rim Administrative Area.

GRCA public affairs staff posted two park updates at 1300 and 1615 providing additional information about North Rim visitor and resident evacuations.

At approximately 1556, due to increased fire behavior, the ad-hoc Type 3 IMT and the North Rim Manager ordered, and sent an Everbridge message, a pre-evacuation order of “SET” for approximately 250 NPS and concessionaire employees on the North Rim. Approximately 20 minutes later, the pre-evacuation order was upgraded to “GO” and all employees were directed to evacuate. The GRCA FMO arrived at the North Rim at approximately 1600. Shortly after, the Canyon Trail Rides concessionaire was called by the GRCA staff to evacuate the mules; however, they were unable to load the animals into trailers due to nearby fire activity limiting access, and they were let loose.

The Superintendent/AA attended a preplanned park staff meeting in Flagstaff. Prior to the meeting, the Superintendent/AA, spoke with Acting Deputy FMO (not the IC) to learn the fire was still slow and creeping, winds projected at 7–10 mph, moving away from the developed area.

The Superintendent/AA returned from Flagstaff and learned of the staff evacuations and firefighting pivot to full suppression efforts.

For several hours employees and concessionaires completed an evacuation described as hurried and anxious with people cramming themselves and personal belongings in available vehicles. One interviewee commented, “the pace of panic from the employees that were evacuating stayed probably until sunset, so close to 7:30pm, employees just pouring out, getting out as fast as they could...”

Some GRCA law enforcement officers previously assigned on July 10 to assist with visitor evacuations were re-assigned by the North Rim Manager to staff the park’s two structural fire engines. These engines are stationed at the North Rim Fire Station 3 and are staffed by GRCA collateral duty structural firefighters.

By the evening, the fire was very active with group torching of trees on all perimeters of the fire. The IC trainee stated the winds shifted and the fire was pushed over the rim edge into Transept Canyon where it was moving down the drainage. He also reported, “ember wash became very heavy from the fire activity and multiple spot fires started showing up at distances up to 0.3 miles away in the area.”

Fire resources prepped Highway 67 to burn out as a containment line to prevent the fire from moving east. Aircraft was directed to support operations in the North Rim developed area. Additional resources were ordered (two Type 1 helicopters, four crews) and aircraft was requested to begin operations at 0700 the next morning. At this time, no structure protection resources were ordered.

A NWCG Wildland Fire Risk and Complexity Assessment (PMS 236) was completed for the Dragon Bravo Fire. This tool is used for assessing risk, determining incident complexity, and identifying an appropriate incident management organization. The assessment stated many concerns and risks for the Dragon Bravo Fire and rated almost all factors as moderate or high complexity. This included noting the fire was threatening the North Rim developed area and the primary plan (confine and contain, just hours prior) was no longer valid, as the fire was outside containment lines (the Outlet Rx planning area). In addition, the PMS 236 reported fire behavior increased with sustained fire runs and spotting between 0.25 and 0.5 miles ahead of the fire. There was concern stated for continued predicted west winds over the next several days that would push the fire towards the North Rim developed area and values at risk. The assessment concluded that the ad-hoc Type 3 team did not have the capacity and recommended an organized Type 3 IMT be ordered for the incident. At approximately 1930, a resource order was submitted for the Northern Arizona Type 3 team.

Additionally, that evening, the IC understood his request to use retardant was conveyed to the Superintendent/AA, however, because the GRCA Superintendent/AA, staff, FMO and IC, were working outside of the ICS for communication, the request did not come directly from the IC and was interpreted by the Superintendent/AA to be a “consideration for future use.” The urgency of the situation was not conveyed to the Superintendent/AA and the decision to authorize retardant use was deferred until requested information on effects to human health and water quality could be addressed.

At 2045, GRCA public affairs posted the fire was estimated at 1,500 acres and had earlier forced the mandatory evacuation of North Rim residents and noted the North Rim remained closed to all visitor use “to support firefighting operations and ensure public safety.”

Last communication with Williams Interagency Dispatch Center (WIDC) for the night was at 2050. Overnight fire activity significantly increased and conditions in the North Rim developed area deteriorated rapidly. Messages exchanged between GRCA Fire Management staff indicated

embers were falling in the North Rim developed area at 2125. One hour later, at approximately 2230, spot fires were found in the North Rim developed area and fire resources began pulling out of the administrative area due to propane tanks venting and moved to the staging area at Station 3. The IC trainee noted there were multiple spot fires that "eventually engulfed vehicles, buildings, and residences in the Admin Loop area". At the same time, other fire resources were sheltering in place at the helibase near the wastewater treatment plant.

Around 2145, the GRCA personnel assigned as the Lead Structural Firefighter for the collateral duty structural fire crews operating on the North Rim directed all structural firefighters to meet at Station 3, put wildland fire personal protective clothing on, and they "will come up with a plan". Radio traffic at 2203 between structure firefighters declared the "fire crossed the road". At 2212, both GRCA structure fire engines and several non-fire GRCA employees in other vehicles, attempted to convoy from Station 3 to the North Kaibab Trailhead. Only one engine and an unknown number of other vehicles made it to the North Kaibab Trailhead parking area passing through fire and heavy smoke on both sides of the road. The second engine returned to Station 3 due to the intensity of the fire crossing the road.

At 2213, out of concern of survivability of sheltering in place and a lack of coordinated leadership, the one engine at North Kaibab Trailhead radioed for permission to proceed up Highway 67 to Lindberg Hill. Response from the GRCA Lead Structural Firefighter was "if that's your safest option, then go for it". Also, one of the structure firefighters on this engine decided to put his structure fire gear on, in the hopes of better protection from fire if they became trapped.

Through the night of July 11 and into the early morning hours of July 12, the remaining structure fire engine and GRCA employees fought the fires around Station 3. Interviews revealed the structure fire resources received little to no tactical direction from wildfire incident management staff and they took mostly independent actions.

Between 2215 and 2300 two non-fire GRCA employees at the North Kaibab Trailhead decided to evacuate down the trail into the canyon. At around 2400, one of these employees communicated to GRCA dispatch they were receiving ash and smoke with spot fires visible in the canyon and asked for confirmation if they should continue down the trail. They were advised to continue to Phantom Ranch.

July 12 Significant fire growth occurred throughout the night with the fire reported at 2000 acres and established south and east of Transept Canyon around midnight. Wildland and structural fire resources worked through the night to secure and protect what they could in the North Rim developed area. Although fire activity moderated in the early morning hours, many structures, vehicles, and equipment in the administrative area were fully consumed by fire. This decrease in fire activity did allow fire resources to protect structures in the general store, shower, and fuel station area. At 0400, fire resources met up at Station 3 and the helibase to find a safe place to bed down.



July 12, 2025, 0052: First GRCA North Rim structure on file. Source: Jason Nez.

Early morning radio traffic from the North Rim Manager reported the remaining GRCA non-wildland fire staff had spent the night on the North Rim and were leaving the North Rim developed area for the Entrance Station.

Communications to WIDC described structure loss and fire resources in the North Rim developed area relocated north to the snowplay area. By 0730, most fire and non-fire personnel were evacuated. A small contingent of fire overhead personnel stayed and assessed damages and totals continued to be refined as more information was collected.

At approximately 0900, IC responsibilities were transferred to a new Type 3 IC to provide relief, due to working through the night. In addition, the resource order was transmitted to WIDC for a CIMT. Around 0930, the GRCA FMO sprayed water on the wastewater treatment plant facade, which had ignited from embers. The FMO believed it was extinguished when he departed the North Rim area moments later.

By mid-morning, the fire crossed over Highway 67 moving east and by 1200 the fire was reported to be 3167 acres. Structure protection within the North Rim developed area began near the general store in the administrative area and helicopters were working on the west flank to prevent spread south towards the Grand Canyon Lodge. Fire resources started burning vegetation to create a defensible space around Station 3.

At 1242 dispatch records reported an urgent message from Air Operations for the IC and Air Attack: “Chlorine gas cylinders explosion.” Approximately 15 minutes later, dispatch confirmed the information was passed along, and the IC would decide what action to take. At 1530 the IC reported to dispatch the fire entered the wastewater treatment facility with HAZMAT on site (chlorine tanks). All resources were evacuating the North Rim developed area and asked dispatch to direct the helicopters to drop water on scene. At 1610, confirmation was received that all resources had evacuated at least 0.5 miles from the scene and Air Attack directed helicopters to continue to drop water on the treatment plant with the goal of keeping the chlorine tanks cool. It was confirmed via a NPS news release that chlorine gas was released from the treatment facility prompting the evacuation of the inner canyon nearby, including Phantom Ranch.

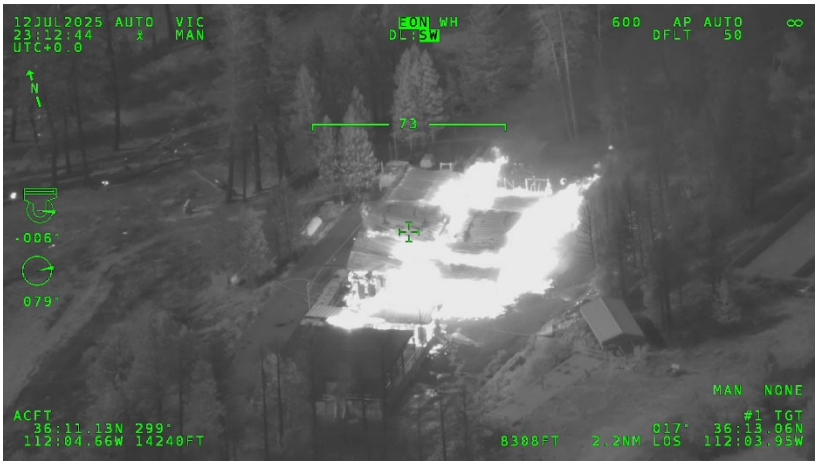


November 10, 2025: GRCA North Rim Wastewater Treatment Plant with some chemical storage (left) and chlorine gas tank storage in previous attached structure destroyed by fire. (back).

The National Weather Service (NWS) issued a weather advisory at 1317 for the Dragon Bravo Fire noting elevated convection activity in the fire area, showers possible but not expected to reach the ground (virga), and winds could increase and get erratic. WildCAD records confirm the weather advisory was delivered to crews stationed in the North Rim area. The IC requested an updated spot weather forecast be read at 1600; however, at 1519 the NWS stated the spot weather forecast from the morning (0500) was still relevant with an update to the sky cover bringing white, puffy clouds.

At 1800, GRCA public affairs posted on social media that the fire “grew quickly overnight, jumping over several fire control lines.” The post provided additional details about impacts to some North Rim structures and trail closures related to a “potential chlorine gas leak.” The post noted the fire was being managed with a “full suppression strategy.” A second post on July 12 stated, “The North Rim of the park remains closed until further notice to support firefighting operations and ensure public safety for the Dragon Bravo Fire and nearby White Sage Fire.”

Northern AZ Type 3 Team IC took command of the Dragon Bravo Fire at 1949. The IC confirmed with dispatch there were night shift fire resources in place and 295 total personnel assigned to the fire for the operational period from July 12-13. Approximately 70 fire personnel worked the night shift. The IC noted communications while traveling to the incident and out of the North Rim were a challenge as was reaching the AA. The IC also recalled getting 5 minutes to speak with the AA for a cursory briefing on leader's intent and a few basic objectives: firefighter and public safety, and North Rim infrastructure were identified priorities.



July 12, 2025: Imagery from an Unmanned Aerial Vehicle of the wastewater treatment plant burning.

Due to impacts at the wastewater treatment plant and other water infrastructure, there was limited water available for use by fire resources. Fire crews attempted to access water from hydrants, but damage to burned structures resulted in pressure loss. After some effort, partial pressure was attained by installing pressure pumps on hydrants for a short period of time.

At roughly 2230, the winds became stronger and the fire moved out of the bottom of Transept Canyon up towards the Grand Canyon rim. The IC recalled once the fire came to the top of the rim, strong North winds pushed the fire over the rim edge. Within about 15 minutes, the fire impacted structures in the North Rim developed area. Fire resources stayed as long as they could but pulled back to safety and adjusted priorities and tactics to re-engage where safe. The last report to dispatch for the day at 2328 stated the fire had moved from the west and was moving towards Grand Canyon Lodge and structures were threatened and burning.

Knowing the Grand Canyon Lodge would be impacted, the IC made multiple attempts to notify the Superintendent/AA. There is no documentation that successful contact was made.

July 13 Early in the morning of July 13, the IC reported everything west of Highway 67 was impacted by the fire as well as the Southern peninsula area and the Grand Canyon Lodge. The spot weather forecast issued from the Flagstaff NWS office indicated a chance of showers and dry thunderstorms after 1200 with gusty and erratic outflow winds possible near storms. The forecast also predicted hot and mostly dry conditions through July 14 with wind gusts up to 20 mph for the afternoons.

Early in the day, unofficial information and images regarding the loss of the Grand Canyon Lodge began to circulate within the firefighting community and on social media.

The IC recalled a morning conversation (approximately 0700) with the Superintendent/AA when retardant in the North Rim developed area was authorized for use. Incident management operations staff placed an order for all available aircraft to support retardant application. At approximately 0930, WIDC confirmed with the incident Air Attack that a Very Large Air Tanker and Large Air Tanker were on order. However, as of 1100 the incident was competing for air resources with the order not filled; the values at risk were updated to include structures and watershed. Another update at 1215 included "Imminent threat to park employees and infrastructure to add to values at risk to get some prioritization." Shortly after (1218), the order

for Large Air Tankers were filled. Throughout the operational shift, 42,000 gallons of retardant were dropped on the fire and North Rim developed area.

A Flagstaff Fire Department Battalion Chief and five Hazard Material Technicians were ordered and requested to report to the North Rim on July 14. The GRCA Chief of Facility Management and Engineering confirmed there were the following HAZMATs on-site: eight A-size cylinders of chlorine gas, six six-gallon drums of sodium bisulfate, 30 five-gallon drums of magnesium hydroxide, and various paints and cleaners. This team also recommended a 0.5 mile safety zone to be set up around the wastewater treatment plant.

A new WFDSS decision was published at 2158, changing the fire management strategy to full suppression, the decision rationale was expanded to include additional information on critical values at risk, impacted stakeholders, and expanded management action triggers. The decision noted that critical values in the North Rim developed area were seriously impacted on July 11 and 12. It was also documented that retardant had been approved for use on this incident and NPS and the neighboring KNF were aligned with the decision to transition into a CIMT. The Superintendent/AA oversaw transition planning for the incoming CIMT.



July 13, 2025: The Grand Canyon Lodge burning.

Later in the day on July 13, GRCA posted a news release that stated, “The Dragon Bravo Fire on the North Rim of Grand Canyon National Park exhibited extreme and volatile fire behavior the evening of July 12, resulting in a 500-acre expansion. Fire managers have confirmed the loss of the Grand Canyon Lodge and numerous historic cabins in the developed area." The news release noted, “The fire is being managed with an aggressive full suppression strategy.”

Also on July 13, GRCA established an InciWeb information page for the Dragon Bravo Fire and posted the fire was “initially managed with a confine and contain strategy, which included multiple containment features to protect structures, facilities and infrastructure...The fire is now being managed with an aggressive full suppression strategy.” The InciWeb post also mentioned the chlorine gas release on July 12 and noted a CIMT would assume command of the fire on July 14.

July 14 At 0600, the Southwest CIMT 4 took command of the fire from the Northern Arizona Type 3 team. Social media posts informed the public of this transition and also updated the fire at 5,716 acres.

July 15 With the CIMT in place, operations focused on securing the North Rim developed area, addressing hazard trees, stabilizing structures, and preventing further spread. Fire activity moderated, though interior heat and hazards persisted.

July 16 At 1611, the GRCA Superintendent informed GRCA employees he was assuming full-time duties as AA for the Dragon Bravo Fire and implemented a temporary governance structure to address

the incident's impacts. Prior to this point, the GRCA Superintendent performed the Superintendent duties plus the Dragon Bravo Fire AA duties. A regional NPS IMT was assigned to support employee health and recovery, contingency planning, and communications. Day-to-day park operations duties were delegated to the acting GRCA Deputy Superintendent.

July 17 GRCA announced fire information would transition to a new Dragon Bravo Fire Facebook account managed by the Southwest Area IMT 4. Subsequently throughout the duration of the fire, incoming IMTs would assume management of the Dragon Bravo Fire information pages.

July 18-July 22 Fire activity decreased, enabling expanded line improvement, and suppression repair planning.

July 23 – August 3 The Dragon Bravo Fire grew by approximately 100,000 acres. A combination of gusty winds and extremely low humidity contributed to this rapid expansion. This fire growth accounted for 69 percent of the total fire acreage. On July 28, command of the fire transferred from the Southwest CIMT 4 to the Southwest CIMT 2. On July 29, the Superintendent of Lake Meredith National Recreation Area assumed the role of AA for the fire.



July 27, 2025: Dragon Bravo Fire as seen from the South Rim.

August 4 Fire activity decreased, enabling expanded line improvement, suppression repair planning, and repair work throughout the incident area.

August 5 A public meeting in Fredonia, AZ, was held with staff from the Southwest CIMT 2 and agency representatives from both the KNF and the NPS. NPS was represented by the current incident AA. No local GRCA management attended the meeting.

August 6 A second public meeting in Page, AZ, was held with staff from the Southwest CIMT 2, the AA, and additional representatives from the KNF. No local GRCA management attended the meeting.

August 7-August 10 Line improvement, suppression repair planning, and repair work continued throughout the incident area.

August 11 Command of the fire transferred from the Southwest CIMT 2 to the Great Basin CIMT 7.

August 12-August 17 Line improvement, suppression repair planning, and repair work continued throughout the incident area. Hazard trees and damaged facilities remained major focuses of operational activity.

August 18 A second public meeting in Fredonia, AZ, was held. The agenda from this public meeting noted members of the incident command team, the KNF Supervisor, and the GRCA Superintendent in attendance. Notes included questions asked by the audience indicate concerns about the bison herd, rebuilding the North Rim developed area, recreation and fuelwood gathering opportunities, and questions from employees and North Rim residents about re-entry and confirmation of property loss.



August 15, 2025: Evening smoke plume of the Dragon Bravo Fire.

August 19-20 On August 19, GRCA Superintendent resumed AA responsibilities for the Dragon Bravo Fire. Line improvement, suppression repair planning, and repair work continued throughout the incident area. Hazard trees and damaged facilities remained major focuses of operational activity.

August 21 A DOI BAER Team arrived at the Dragon Bravo Fire to identify potential risks to human life and safety, as well as critical natural and cultural resources in GRCA and on BLM Arizona Strip District lands.

August 22-23 During the time Southwest CIMT 2 had command of the fire (July 28 – August 10), a SAFENET was filed on August 22, citing a reported event date of July 14, reporting concerns about potential HAZMAT where firefighters were working in the North Rim developed area. The SAFENET report alleged there were "private meetings [where the IMT was] bullied and pressured by Park Service AAs, pushing management to allow use of firefighters in and around the known HAZMAT site, to fell over 1,000 trees that had been marked as "hazard", even when operational overhead… had stated the hazard work had been long completed. The non-hazard marked trees seemed to align with view shed and potential new building sites instead." Line improvement, suppression repair planning, and repair work continued throughout the incident area. Hazard trees and damaged facilities remained major focuses of operational activity.

August 24 Command of the fire transferred from the Great Basin CIMT 7 to the California CIMT 6.

August 25 Interagency BAER teams from DOI and USFS completed field data evaluations to produce the Soil Burn Severity (SBS) map for the Dragon Bravo Fire. This work helped estimate post-fire risks, such as erosion, sediment washing into streams, increased stream flows, and the chances of debris flows.

August 26-August 28 Line improvement, suppression repair planning, and repair work continued throughout the incident area. Hazard trees and damaged facilities remained major focuses of operational activity.

August 29 The organized re-entry was a coordinated effort to allow staff to retrieve personal belongings. This included private vehicles. It should be noted several employees were very vocal and frustrated about the lack of information being shared from NPS leadership pertaining to re-entry timelines and guidelines for retrieving belongings.

August 30-September 1 Line improvement, suppression repair planning, and repair work continued throughout the incident area. Hazard trees and damaged facilities remained major focuses of operational activity.

September 2 Command of the fire transferred from the California CIMT 6 to the Southwest CIMT 3.

September 3 – September 7 Line improvement, suppression repair planning, and repair work continued throughout the incident area. Hazard trees and damaged facilities remained major focuses of operational activity.

September 8 A contracted log truck driver stopped his truck at the North Rim Entrance Station and told the law enforcement officer on site he was having pain in his arms. The officer recognized that he was possibly in cardiac distress and requested help from nearby fire crews who radioed for additional assistance. The driver rapidly became unresponsive and it was determined he no longer had a pulse. Responders immediately began chest compressions, and two additional medical crews and an ambulance arrived on scene promptly. While cardiopulmonary resuscitation (CPR) was performed for approximately 40 minutes and emergency medical staff administered four doses of epinephrine, responders consulted with a medical doctor from Mountain Vista Hospital in Mesa, AZ, who terminated resuscitation efforts and declared time of death.

September 9 – September 22 Containment steadily increased as repair and stabilization progressed. No significant fire growth occurred during this period.

September 23 Command of the fire transferred from the Southwest CIMT 3 team to the Wyoming Type 3 Team.

September 24-September 29 Containment steadily increased as repair and stabilization progressed. No significant fire growth occurred during this period.

September 29 The Dragon Bravo Fire was declared 100% contained. At its conclusion, the Dragon Bravo Fire had burned 145,504 acres. Eleven residences and 102 other structures were destroyed. 24 responders were injured, and one fatality occurred.

September 30 A contract water tender driver pulled to the side of the road to provide room for another vehicle to pass by. The rear wheels of the tender began to sink into the soft shoulder, and the driver felt the sinking and began to steer out of the soft area. As the rear wheels came out of the soft material, they struck a culvert catch-basin, causing the driver to lose control. The vehicle rolled onto its driver's side, then top. The event caused significant damage to the cab and tank of the vehicle. The driver was uninjured and was wearing a seatbelt at the time of the accident.



Two rocking chairs that survived the Dragon Bravo Fire when it destroyed Grand Canyon Lodge July 12-13, 2025. The remains of the lodge are visible in the background.

MAJOR THEMES, FINDINGS AND RECOMMENDATIONS[4]

Theme 1: Leadership roles did not align with expertise or decision making authority and lacked necessary delegations.

Expectations for wildland fire leadership on site are established by a national system of standards. While leadership for any incident is dependent upon the unique situation, this national system of wildfire response allows reasonable action comparisons against both the standards and the actions taken by, or reasonably expected to be taken by, leaders in similar situations.

Leadership on site during the Dragon Bravo Fire did not adhere to, and require others to adhere to, the qualification, preparation, and operational incident requirements established by multiple authorities. This contributed to confusion over chain of command, lack of transparency in command and control, and inconsistent or inadequate planning and preparation for the selected fire management strategies. This resulted in:

- delayed decision making for the use of retardant and mechanized equipment
- inaccurate fire status reports (ICS-209s) de-prioritized the incident
- insufficient allocation of resources compared to demands
    - lack of identification of critical values (e.g., historic buildings, human health and safety, wildlife, ecosystems, etc.)
- misalignment of operational missions
- and actions inconsistent with national direction.

While specific references are discussed under the respective findings below, the following list provides foundational expectations for leadership during incidents.

- The Interagency Standards for Fire and Fire Aviation Operations (known as the Red Book) 2025
- Superintendent's Desk Reference For The Fire Program Management (2019)
- 2025 National Interagency Standards for Resource Mobilization
- Reference Manual 18: Wildland Fire Management (2019)
- Director's Order 18: Wildland Fire Management (2009)

These documents, collectively, have provided direction and expectations for wildland fire response within NPS units, including the GRCA.

Finding 1.1: The National Park Service system for qualifying Agency Administrators does not meet the demands of the current fire environment.

The NPS does not have an effective, consistently implemented system to ensure AAs possess the qualifications, experience, and availability necessary to manage complex wildland fire incidents. IQCS had identified qualifications for AAs. The NPS Superintendent's Desk Reference for Fire Program Management states Park Superintendents who have potential wildland fire response in their park, their designated acting superintendents, and supervisors of FMOs must attain and maintain the AA qualification in IQCS within two years of appointment.

A review of IQCS records did not identify any GRCA park leadership as qualified AA at the onset of the Dragon Bravo Fire. According to incident records, the first qualified AA assigned to the incident was the Lake Meredith Superintendent on July 30. While the GRCA Superintendent had completed some required AA training classes, this training and/or any experience was not documented in IQCS to demonstrate readiness for the AA role. In addition, interviews indicated that the GRCA Superintendent did not possess sufficient prior experience managing incidents of comparable complexity. Historically, qualified AAs

[4] See Appendix D for an outline listing of all Major Themes, Findings, and Recommendations.

from other agencies, such as the USFS, served in this role on the North Rim. For the Dragon Bravo Fire, a local qualified external AA was available but not ordered by those on site.

The NPS AA qualification system lacked a structured mechanism to ensure AAs acquire progressive, relevant experience commensurate with incident complexity, such as a task book or equivalent experience pathway. The system did not promote or enable mentoring, peer coaching, or the assignment of experienced AAs from other units or agencies to support and develop less experienced AAs during complex incidents. An effective AA understands how to analyze operational risks and socio-political impacts to guide wildland fire strategic decisions and minimize negative outcomes for the agency, resources, and health and safety. Additionally, the breadth and demands of the park superintendent role may not allow the ability of incumbents to concurrently serve as a fully engaged AA during prolonged or high-complexity fire events.

Based on interviews with GRCA and NPS national fire leadership, NPS had a limited pool of qualified AAs nationally in 2025. There were extensive superintendent vacancies across the agency resulting in a high number of acting or interim line officers and the issuance of a national waiver of AA qualification requirements. NPS may have been unable to provide depth, relief, and ensure experience and qualifications align with fire complexity on large extended incidents, periods of elevated national fire activity, or when local AA capacity was exceeded.

Collectively, these conditions demonstrated the NPS AA qualification, documentation, and support system may not have aligned with the operational realities, complexities, and tempos of a wildland fire environment.

Recommendations:

1.1.1. Improve and standardize Government-wide Agency Administrator qualification requirements to align with incident complexity and operational risk. Establish a consistent, interagency-informed AA qualification framework comparable in rigor to other NWCG qualification systems. This framework should include tiered qualification levels tied to incident complexity, defined training and experience requirements, and documented progression criteria. It should incorporate required experience components, such as a common task book or equivalent experience pathway, formal mentoring and peer-coaching expectations, and documentation of qualifications, training, and experience in IQCS to ensure transparency, readiness verification, and appropriate assignment.

1.1.2. Expand and formalize the use of qualified Agency Administrators across agencies to ensure adequate coverage and expertise. Ensure that AA assignments are based on qualification and experience rather than home unit or employing agency, and that interagency AA resources are routinely leveraged to support complex incidents. Units with recurring or high-risk fire regimes should preestablish and maintain a network of qualified AAs with familiarity in comparable operational environments. This approach would increase national capacity and improve alignment between incident complexity and AA capability.

1.1.3. Replace ad hoc qualification waivers with a structured, risk-based process that is documented and reviewable. When AA qualification requirements cannot be met, require that any waiver be supported by a documented, risk-based justification tied to incident complexity and operational risk, approved at the appropriate level, and retained in an auditable record. The process should include defined minimum eligibility criteria, required compensating controls (e.g., mentoring, peer review, augmentation), and periodic review to ensure waivers are limited, transparent, and not used as a substitute for building and sustaining a qualified AA cadre.

1.1.4. Separate superintendent duties from Agency Administrator duties during complex incidents. For extended duration incidents involving teams of Type 3 complexity or higher, agencies should ensure AA duties are clearly separated from routine superintendent or line officer responsibilities, either by assigning an acting superintendent or by designating a qualified AA dedicated to the incident.

Finding 1.2: Organizational structure delayed or prevented effective decision making.

GRCA personnel did not consistently rely on the NIMS and ICS structures required by the Interagency Standards for Fire and Fire Aviation Operations (Red Book). ICS, the on-scene management system within NIMS, was established for all wildfires, regardless of complexity, to include an IC as the single individual responsible to the AA for all incident activities.

From July 6 through July 13, the record reflects several GRCA staff, including the FMO, Chief of Visitor Resources (Chief Ranger), and North Rim Manager, inserted opinions and informal decisions outside the established ICS structure, despite not holding command or delegated authority within the incident organization. This departure from required ICS roles and communication pathways disrupted both upward and downward information flow, diluted decision authority, and introduced additional layers of analysis at times when rapid decisions were required.

Incident related issues were routed through informal GRCA communication channels, not direct through the IC to the AA. This pattern replaced required ICS communications with everyday organizational habits and may have weakened the chain of command, delayed decisions, and prevented timely adjustments to strategy during critical periods. This separated the AA from first-hand, accurate, and timely information needed to make informed decisions.

Two examples illustrate how not adhering to NIMS and ICS may have contributed to delayed or ineffective decision making:

Approval of Mechanized Equipment Use on W1C Road:

Preparation of the W1C Road as a containment line was a critical element of the selected confine and contain strategy. On July 9, 2025, fire operations staff requested approval for mechanized equipment use from the North Rim Manager rather than through the IC to the AA. The FMO, Chief Ranger, and North Rim Manager declined the request without delegated authority to do so, and there is no evidence the AA was consulted at the time. A subsequent request two days later was elevated to the AA and approved. The fire crossed the road approximately 4.5 hours later.

Approval of Retardant Use:

On July 11, 2025, the IC understood that GRCA fire leadership was discussing retardant approval with the AA and was later told the request was pending additional environmental and human health information. The incoming IC received similar information from the outgoing IC and the FMO. The Superintendent/AA later stated that he had not been asked for retardant approval during this period and was instead told a request would come later. When the request was formally presented on the morning of July 13, it was approved almost immediately. This breakdown in communication resulted in a multi-day delay in retardant use during escalating fire behavior, after several structures, including the North Rim Lodge, had already been lost.



July 24, 2025: Aerial retardant drop from a tanker.

Recommendations:

1.2.1. Adhere to NIMS and ICS communication structures for all incidents. Require that all incident-related communications and decisions flow through the established ICS structure, with the IC serving as the single, authoritative point of contact with the AA. For all Type 3 or higher incidents, mandate direct, routine communication between the AA and the IC to ensure first-hand situational awareness, clear leader's intent, and alignment between strategy, authority, and risk acceptance.

1.2.2. Realign fire management reporting structures to ensure direct access to park or unit leadership during incidents. Fire management should report directly to park or unit leadership during incidents, reducing layers that dilute communication, introduce informal decision making pathways, or delay time-sensitive decisions.

1.2.3. Reinforce Agency Administrator communication and oversight expectations through policy and guidance. Ensure Superintendents and AAs are trained on and consistently apply the communication, oversight, and engagement expectations outlined in the Superintendent's Desk Reference for Fire Program Management or equivalent guidance. Update this guidance as needed to reflect the use of CIMTs and reinforce adherence during incidents.

Finding 1.3: The Agency Administrator did not provide timely and complete delegations of authority or adequately communicate fire management objectives.

Per the Interagency Standards for Fire and Fire Aviation Operations (Red Book), the AA is responsible for issuing a written Delegation of Authority (DOA) to the IC and for ensuring that delegations align with the selected management strategy and incident complexity. Under the standing KNF–GRCA Type 3, 4, and 5 Incident Commander Delegation of Authority, any fire managed for resource benefit requires an incident-specific delegation.

Once the confine and contain strategy was selected for the Dragon Bravo Fire on July 6, the existing delegation was no longer valid and a new, incident-specific DOA was required. No such delegation was issued. Between July 6 and July 12, command of the Dragon Bravo Fire transitioned multiple times without a single valid delegation of authority being issued. As a result, ICs operated for multiple operational periods without clear, documented authority to act, and without formal alignment of objectives, constraints, and expectations.

This pattern continued during subsequent transitions. When the Northern Arizona Type 3 Team assumed command on July 12, the incoming IC did not receive a delegation of authority at the time of transition, despite explicitly requesting one due to the evolving nature of the incident. A delegation was later transmitted, but it was the incorrect document and intended for a CIMT scheduled to arrive the next day. A corrected delegation was not issued for several additional days. These delays and errors reflected a lack of recognition of delegation requirements when management strategies change and during command transitions.

In addition, interagency operating plans affecting the incident area were not consistently executed by officials with statutory authority, further reflecting a broader pattern of operating outside appropriate delegation and authority channels.

The AA did not consistently provide the oversight, leader's intent, and clarity on values at risk required by policy. Per the Red Book and NPS RM-18, AAs are required to assess complexity, ensure appropriate management and supervision, remain available and engaged, attend or ensure presence at daily briefings, and coordinate closely with the IC to ensure tactics align with strategy. Limited direct communication between the AA and multiple ICs during critical periods (July 10-13) were evident.

Flexibility was provided in the Superintendent's Desk Reference for Fire Program Management for issuing annual or standing delegations to support wildland fire operations, including delegations to qualified fire leaders or neighboring organizations. While this flexibility existed, no delegations were issued beyond the standing Type 3, 4, and 5 letter. In addition, the North Rim Manager position is formally defined as advisory and was not delegated decision making authority for wildland fire or other incident-related actions. As the only management presence physically located on the North Rim,

employees and incident personnel have routinely defaulted to the North Rim Manager for guidance. This dynamic may have exacerbated the provision of informal or "unofficial" direction intended to anticipate what GRCA leadership might decide and created ambiguity in authority, inconsistent messaging, and delays in formal decision making.

Recommendations:

1.3.1. Issue accurate, timely delegations of authority aligned with incident strategy and complexity. AAs must issue written delegations of authority whenever command transitions occur or when management strategy changes, in accordance with the Interagency Standards for Fire and Fire Aviation Operations (Red Book) and agency-specific guidance. Delegations must clearly define objectives, constraints, authorities, and expectations and must be valid for the strategy being employed.

1.3.2. Ensure Agency Administrators conduct timely briefings and in-briefings with Incident Commanders. AAs must provide in-briefings and ongoing briefings to all ICs and Incident Management Teams as required by the Red Book and the Superintendent's Desk Reference for Fire Program Management, ensuring shared understanding of intent, priorities, constraints, and values at risk.

1.3.3. Standardize delegation practices and governance across agencies and incidents. Agencies should establish standardized delegation frameworks, templates, and guidance to ensure consistent, strategy-specific delegations are issued, tracked, and accessible during incidents. Interagency operating plans and delegations must be executed by officials with statutory authority and reviewed regularly for clarity, sufficiency, and alignment with policy.

1.3.4. Require Agency Administrators to clearly document leader's intent and pre-identify and document values at risk to support delegation and decision making. Leader's intent, priorities, acceptable risk, and values at risk in delegations of authority, WFDSS decisions, or stand-alone intent statements, must be consistent with Red Book and RM-18 requirements. Administrative units should pre-identify and prioritize values at risk using standardized, GIS-based inventories that support AA decision making. These products should be integrated into fire management plans and decision support systems to enable rapid alignment of strategy, delegation, and operational priorities.

1.3.5. Ensure Agency Administrators are on-call/available at all times. During active incidents, having the AA available to the IC is imperative to making timely decisions as situations can evolve rapidly.

1.3.6. Clarify and delegate Agency Administrator authorities necessary for timely operational decisions. Establish necessary authorities to support time-critical fire operations, including approval of suppression tools and tactics in special status areas (such as retardant or the use of mechanized equipment). Authorities must be clearly delegated to the AA or acting AA to avoid delays. Include establishing pre-approvals for high risk fire areas.

1.3.7. Evaluate the North Rim management structure given the geographic isolation and operational responsibility. Given the geographic separation, limited access, and operational complexity of the North Rim, GRCA and NPS leadership should explore whether alternative governance models are more appropriate. Any such model should clearly document roles, limits of authority, and communication pathways consistent with NIMS, ICS, and interagency fire management standards, and should be supported by appropriate qualifications, training, and written delegations.

Finding 1.4: Continued authorization of the confine and contain strategy did not reflect awareness of changing conditions or escalating risk.

WFDSS was appropriately used to document AA decisions during the Dragon Bravo Fire. However, repeated reaffirmation of the initial confine and contain strategy, despite rapidly changing conditions and increasing complexity, may have demonstrated a lack of effective AA oversight and situational awareness.

By July 10, conditions in the region had materially changed. The highly active White Sage Fire prompted visitor evacuations from the North Rim developed area. On July 11, the Dragon Bravo Fire nearly tripled in size, was burning outside the planned perimeter, had crossed the W1C Road identified as a containment line, and exhibited spotting and extreme fire behavior. Despite these developments, WFDSS decisions signed on July 6, 9, and 11 continued to reflect the same confine and contain strategy, with no documented reassessment or modification of approach. The July 11 reaffirmation is of particular concern given the clear escalation in risk.

The North Rim developed area was not included in the WFDSS planning area, despite being increasingly threatened. Hours after the July 11 WFDSS decision was approved, evacuation orders were initiated for the developed area due to extreme fire behavior. This may have indicated that the documented decision framework did not reflect the full scope of values at risk or anticipated fire spread.

Additional indicators of increasing complexity were present in the NWCG Wildland Fire Risk and Complexity Assessment completed on July 11. Although the assessment classified the incident as Type 3, numerous factors were rated "high," including threats to the North Rim developed area, invalidation of existing strategies, lack of an identified alternative strategy, uncertainty in fire location due to spotting, high Energy Release Components, and very high fire danger. These indicators may have suggested the incident had exceeded local unit capacity and warranted classification as a complex incident. The park ordered a Type 3 Incident Management Team on July 11 and did not order a CIMT until early July 12.

These conditions demonstrate that the confine and contain strategy may not have been systematically revalidated against changing conditions, that WFDSS decisions may not have reflected evolving risk, and that the AA may not have ensured strategic alignment between documented decisions and operational realities.



November 10, 2025: Entrance to the Helibase.

Recommendations:

1.4.1. Require formal concurrence and peer review when approving a strategy other than full suppression. Require AA to order a peer review and receive decision concurrence from another qualified AA outside the home unit or direct chain of command when approving a strategy in WFDSS other than full suppression. The concurrence rationale should explicitly address alignment with regional and national fire strategy and clearly justify any deviation.

1.4.2. Ensure WFDSS decisions clearly document rationale and reflect current conditions. AAs must ensure that WFDSS decisions are clear, articulate the rationale for the selected strategy, and demonstrate alignment with current and forecasted conditions, risks, and objectives. Decisions should be reviewed at each approval to confirm they accurately reflect operational realities and intended outcomes.

1.4.3. Require WFDSS planning areas to encompass all potential values at risk. WFDSS planning areas must fully encompass potential fire spread and all relevant operational, geographic, and jurisdictional considerations, including developed areas and critical infrastructure, to ensure that protection needs are explicitly addressed in strategic decisions.

1.4.4. Require regular, time-certain revalidation of confine and contain strategies. When a confine and contain strategy is used, AAs, ICs, and local fire leadership must formally revalidate the strategy on a regular, time-certain basis. Revalidation should consider weather forecasts, RAWS indicators, current fire behavior, available resources, local geographic factors, national and regional activity levels, and updated complexity assessments. If revalidation indicates material changes, the strategy and documentation must be updated.

1.4.5. Standardize WFDSS documentation to identify assumptions and triggers for strategy change. WFDSS documentation should explicitly identify key assumptions, potential failure points, and defined contingency triggers that would prompt a reconsideration or change in strategy. This ensures transparency, supports adaptive decision making, and reduces delays when conditions deteriorate.

Finding 1.5: Overemphasis on conservation values and policies associated with proposed wilderness areas may have increased decision timelines and limited tools available for fire operations.

Motorized equipment was not authorized along the W1C Road. Delegations and informal guidance treated all park lands as wilderness, restricting commonly used suppression tactics. The use of retardant was delayed due to environmental and human health concerns that were not clearly identified in advance.

The absence of clearly pre-identified suppression tool authorization zones, unresolved distinctions between designated and proposed wilderness, and lack of advance environmental mitigation planning may have resulted in extended decision timelines during critical early periods of the fire. These conditions demonstrated leadership may not have balanced conservation objectives with life safety, infrastructure protection, and operational readiness, either before or during the incident.

Recommendations:

1.5.1. Clarify and reinforce Agency Administrator authority to balance conservation values with operational decision making. Ensure AAs are trained, authorized, and supported to make timely decisions that appropriately balance conservation values with life safety, firefighter safety, and protection of critical infrastructure during wildfire incidents.

1.5.2. Clearly distinguish designated wilderness from proposed wilderness in fire operations and pre-identify and map suppression tool authorization zones. Establish and communicate clear policy distinctions between designated wilderness and proposed wilderness for purposes of suppression strategy, tool authorization, and operational decision making to avoid unnecessary constraints during time-critical incidents.

Pre-identify and map areas where suppression tools such as retardant, motorized access, and heavy equipment are or may be authorized, including associated environmental mitigations. These products should be developed preseason and readily available to support rapid decision making under compressed timelines.

Finding 1.6: No clear protocol existed for conveying mandatory national direction on fire suppression strategy, and no mechanism ensured compliance.

Interviews confirmed national direction from NPS on fire suppression strategy was communicated to GRCA fire leadership prior to and during the Dragon Bravo Fire. This included guidance from the NPS Fire Director that fires were not to be managed for resource benefit during the 2025 fire season. However, GRCA fire leadership implemented and reaffirmed a confine and contain strategy.

Interviews further indicated that the Superintendent/AA were not informed of the general national guidance. Strategic decisions were made without awareness of national posture.

These conditions illustrate that the NPS does not have an effective protocol for communicating national wildland fire strategy in a manner that ensures consistent receipt, shared understanding, and clarity regarding whether direction is mandatory or discretionary. NPS national guidance was perceived by some recipients as advisory rather than directive, leaving decision space ambiguous and allowing divergence from intended posture.

In addition, NPS lacks a formal mechanism to document concurrence with national direction or to require justification when deviation occurs. There is no standardized process to verify national fire posture has been acknowledged, incorporated into decision making, or intentionally departed from with documented rationale. As a result, national strategic intent did not reliably translate into operational decisions during a rapidly evolving incident.

Recommendations:

1.6.1. Establish a standardized protocol for communicating national wildland fire posture and direction. Develop and implement a standard protocol to ensure national and regional fire directions are communicated clearly, consistently, and directly to line officers/management, AAs and fire leadership. The protocol should explicitly distinguish mandatory direction from discretionary guidance and identify required recipients.

1.6.2. Institutionalize a national preseason Agency Administrator workshop. Adopt and institutionalize a national-level preseason workshop for AAs focused on translating national fire posture and strategic intent into operational decision making expectations. The workshop should emphasize consistency and documentation requirements for wildland fire decisions.

1.6.3. Communicate an annual national wildland fire posture and leader's intent. Ensure national leadership annually issues a clear, unambiguous statement of wildland fire posture and leader's intent prior to each fire season. This communication should define expectations for suppression strategies, decision authority, and compliance responsibilities, and be consistently referenced across planning, decision-support systems, and incident communications.

1.6.4. Require documentation of concurrence with, or deviation from, national fire posture. Require AAs to explicitly document concurrence with national wildland fire posture, or to document any deviation in a standardized, auditable decision record. Documentation should include rationales, risk tradeoffs, and implications for values at risk, and should be accessible for review.

Finding 1.7: Interagency coordination did not align with established agreements and excluded available expertise.

Coordination between the GRCA and the KNF did not align with established interagency agreements during the Dragon Bravo Fire. The record indicates GRCA did not fully adhere to the North Zone Interagency Annual Operating Plan, which defines shared roles and positions, responsibilities, and coordination expectations for fire management affecting lands on the North Rim and adjacent National Forest System lands.

GRCA leadership designated the incident as a "park fire" and did not collaborate the confine and contain strategy with the KNF. Interviews reflected a strained working relationship during the incident, with KNF perspectives sidelined from early strategic decisions, including development of the WFDSS planning area, which was drawn without incorporating adjacent USFS lands. This may have removed critical local expertise from decisions directly affecting cross boundary fire behavior, access, and operational options.

Limited preseason engagement between the GRCA Superintendent and the KNF Supervisor may have contributed to unclear operational roles, inconsistent interpretation of leader's intent, and ambiguity regarding command and coordination responsibilities. The absence of a preseason leadership fire alignment meeting between KNF and GRCA, a departure from past practice, may have weakened interagency readiness and mutual understanding prior to the incident.

Recommendations:

1.7.1. Understand and follow existing agreements. Line officers and AAs are responsible for understanding applicable agreements and ensuring compliance during incident planning and decision making.

1.7.2. Explore the development of consolidated Fire Management Plans and ensure preseason leadership alignment. Recommend the integration of local unit fire management plans into landscape or regional-level interagency fire management plans, including federal, state, and local partners to establish shared Strategic Management Approaches, coordination expectations, and operational assumptions to support streamlined initial attack and more efficient operation of the USWFS. Plans should be reviewed collaboratively on a periodic basis to ensure alignment across the landscape/region. Line officers should conduct annual preseason leadership alignment meetings. Outcomes of meetings should be documented assumptions and thresholds in wildfire

management and interagency coordination. Preseason leadership alignment meetings should be a best practice among all agencies to ensure coordination and cooperation with neighboring agencies.

1.7.3. Apply best practices for development of WFDSS planning areas on cross-boundary incidents. AAs must ensure WFDSS planning areas adequately encompass the potential fire area and account for relevant operational, geographic, and jurisdictional factors. For incidents involving multiple jurisdictions or protection agreements, planning areas, strategy, contingencies, and delegations of authority should be developed collaboratively with documented interagency concurrence.

1.7.4. Dissolve the North Zone Operating Plan. Update interagency agreements to reflect a response concept consistent with master cooperative agreements. Discontinue use of operating plans that conflict with established agency administrative authorities and replace them with agreements that clearly align responsibility with authority.

Theme 2: Critical information and predictive tools were not readily used to make informed decisions.

Critical information such as weather forecasts, field observations, and decision-support tools were available to decision makers, but were not transformed into a cohesive common operating picture. This information could have been used to establish clear trigger points and document strategic options as the Dragon Bravo Fire evolved. As fire and weather conditions changed, strong communications needed to remain across shifts, teams, and leadership transitions.

Finding 2.1: Fire weather forecasts and growth indicators were not translated into strategic trigger points for changing fire conditions.

Multiple fire information products were available during the early operational periods (July 4–11) including: (a) forecast narratives described drying and gusty/erratic wind potential; (b) RAWS/indices indicated a drying trend after early monsoon moisture; and (c) increased fire behavior indicators (spotting, torching, growth toward values at risk).

Documentation on fire management decisions did not demonstrate these forecasts/indicators were converted into clear strategic decision-based trigger points. The decision record on July 11 included trigger fields populated as 'N/A' and maintains a single confine and contain strategy when fire activity and proximity to the North Rim developed area were increasing.

Without explicit triggers on when to reassess or change suppression strategies, it was difficult to audit whether leadership correctly interpreted predictive information and whether timely alternative strategies were considered. It also suggests that leadership may have been fully committed to the strategy even though there were multiple predictions that fire conditions may move into a high-consequence alignment window where fire suppression could become a challenge.

Recommendations:

2.1.1. Establish a daily 'forecast-to-strategy' decision tree. This should include information and engagement from predictive services, fire behavior analysts, operations and AAs. Results should include a short-written decision log entry, updated management action points/triggers, and a resourcing posture decision (pre-positioning, aviation, structure triage resources, contingency line prep).

2.1.2. Require MAPs/triggers to be explicitly measurable, time-bound and carried forward into WFDSS, the IAP, and the transition briefing package. This could include energy release components/Hot Dry Windy (HDW) percentile gates, weather forecast with wind/RH thresholds, perimeter distance-to-values thresholds, and/or observed growth/spotting thresholds.

2.1.3. When models indicate low probability, but high consequence outcomes, additional documentation is required. This should include a discussion of risk considerations and what additional safeguards are warranted despite low probability. For example, this could have included FSpro model probability of impact to developed areas.

Finding 2.2: Initial WFDSS decisions did not clearly include or explain assumptions, risks, or contingency triggers.

Decision documentation is expected to provide a transparent record of: (a) the strategic alternatives considered, (b) the assumptions supporting those alternatives, (c) the comparative risk to firefighters and values, and (d) the conditions that would cause a strategy change. In early WFDSS decisions, narratives repeatedly frame confine and contain as 'lower risk' and suggested values are 'easily protected,' while also acknowledging foreseeable conditions for increased spread when drying and wind alignment occur.

Where predictive information suggested a transition pattern in weather conditions (e.g., going from a wet/moist period to a drying trend, outflow wind hazards, forecast windows for moderate-to-high fire spread), the decision record did not consistently show how those signals changed the comparative analysis across different courses of action. Additionally, some situational information (e.g., proximity of the fire to the developed area and/or changes in acreage) appears inconsistently represented across documents, which undermined the integrity of the decision record.

From a decision-quality perspective, the record read as ‘justifying’ a preferred strategy rather than documenting an explicit risk trade-off with clearly defined failure points and need for reevaluation.

Recommendations:

2.2.1. Require a side-by-side comparison of at least two viable strategic courses of action for high-consequence fires. This would be required when a management strategy other than full suppression is selected (e.g., confine and contain or point protection/containment), including explicit failure points and operational constraints.

2.2.2. Require an ‘Assumptions & Validation’ table in WFDSS. This table should include key assumptions (monsoon relief timing, containment reliability, resource availability, wilderness constraints), how each assumption will be tested/validated, and define what decision changes if validation fails.

Finding 2.3: Frequent changes in Incident Commanders and a lack of thorough in-briefing from the Agency Administrator may have contributed to information and intelligence gaps.

From July 4 to the morning of July 14, seven different ICs managed the fire, with a CIMT assuming control on July 14. Critical fire activity on July 11 and 12 created a high-tempo operational environment (life safety, structure protection, HAZMAT constraints, and evacuation logistics) and was followed by multiple command transitions and preparations for transfer of command to the CIMT. The risk of knowledge loss can be elevated unless a standardized transition process is used. Incoming IMTs during these days may not have had all information needed to make quick and sound operational decisions.

A specific concern identified that certain forms of critical intelligence (e.g., aerial/infrared products and other predictive or mapping outputs) were not consistently passed forward in a way that was usable to incoming ICs/IMTs.



July 27, 2025: Fire line medics monitor activities from a UTV. Source: Eric Kolb

Recommendations:

2.3.1. Adopt a standardized transition process or checklist for Type 3 to CIMT transitions. This should include: decision history (WFDSS intent, assumptions, triggers), latest predictive products (spot forecasts, RAWS trends, modeled growth), prioritized values-at-risk map with structure triage/status, suppression contingency features and reliability ratings, and open safety/public safety issues (e.g., HAZMAT access constraints).

2.3.2. Require a formal in/out-brief with documented sign-off when command transitions occur under high operational tempo. This should include explicit discussion of the next 24–72 hour forecast window and management action point thresholds.

2.3.3. Create a single ‘common operating picture’ repository location for incident critical products to reduce loss of information across transitions (maps, IR, decision logs, WFDSS, IAPs). ICs need to ensure foundational information necessary to transition to the next team are contained in a single location, similar to the established process a CIM Planning Chief would follow.

Finding 2.4: From July 4-11, minimal assessment was completed to determine the reliability of containment features based on current environmental or operational conditions.

Strategic documentation and supporting analyses indicated a reliance on containment features such as roads/trails (e.g., W1/W1C and Widforss Trail), prior fire scars, and the rim of the canyon. At least one

decision record described most of the planning area as a proposed prescribed fire unit to be burned in the fall of 2027 or 2028, with leadership communications indicating an intent to ‘box’ and burn out the unit to complete a future project.

While using existing features can be appropriate, strategic decisions should evaluate whether those features are likely to hold under the weather and fire behavior forecast alignment window (winds, RH, fuel moisture, spotting potential) and have a contingency if they do not. The records reflected that there may have been overconfidence in the contaminant lines or features and insufficient documentation of failure points.

It is not clear from the record that containment-feature condition and readiness, such as containment line quality, road access and burnout probability were documented in a way that could be audited and handed forward to incoming teams.

Recommendations:

2.4.1. Implement a ‘containment feature assessment’ product for high-consequence fires. This product should consider containment feature type (road/trail/fire scar), current condition, maintenance needs, fuel/terrain context, expected holding probability under forecast window, and contingency options. This should be updated as conditions change.

2.4.2. When a strategy relies on a planned prescribed-fire unit boundary as a functional control feature, require explicit justification and verification steps. A strategy should evaluate what prep is needed for a control feature to be viable and successful, how many line producing resources are needed, and what triggers prompt abandonment.

2.4.3. Add a failure-point review, to evaluate ‘how this line could fail?’. This should be included into operational briefings, the decision log, and link failure points to trigger thresholds and contingency resource orders.

Theme 3: Execution of operational, planning and logistical decisions did not match the tempo and changing conditions of the Dragon Bravo Fire.

The effectiveness of the chosen fire suppression strategies and tactics, and the planning and resource ordering efforts may not have met operational needs. In a remote location like the North Rim, planning and ordering decisions must be made in anticipation of possible delays in response and delivery. As the operational tempo increased, decisions became more time compressed, making the need for quick decision making even more important.

Finding 3.1: As fire behavior increased and response conditions deteriorated, there was a lack of realization of the elevated operational complexity.

As response conditions deteriorated, there was a disconnect between operational resource requests, team transitions, resource mobilization times, and the time required to integrate responding resources. Between July 4 and 14, command of the incident passed rapidly through 7 different ICs for this 10-day period, with some transfers of command not happening face to face. This may have contributed to critical information not shared or passed from IC to IC. There was no communication of set objectives, what had occurred and what needed to occur to meet the changing conditions of the fire environment. In addition, there was no shared or communicated Primary, Alternative, Contingency, or Emergency (PACE) plan for fire suppression documented or shared from IC to IC.

Recommendations:

3.1.1. Implement a mandatory, structured transition checklist (such as the NWCG Briefing Checklist) for every transition to ensure data integrity. Require use of a standardized, comprehensive transition checklist for every IC or team transition to preserve continuity of objectives, intelligence, resource status, constraints, and decision rationale. Transitions should be deliberately planned rather than ad hoc.

3.1.2. Transitions should ideally occur during morning briefings to maximize situational awareness for all incoming personnel. Establish expectations that command transitions occur during operational periods that allow broad participation and shared understanding whenever conditions permit.

3.1.3. Utilize periodic complexity assessments. Require formal re-evaluation of incident complexity using recognized tools (e.g., Wildland Fire Risk and Complexity Assessment, PMS 236) whenever fire behavior, values-at-risk exposure, or environmental conditions materially change, consistent with Red Book and interagency best practices. Require reassessment when WUI threats escalate, spotting occurs beyond anticipated containment features, or resource shortfalls emerge, and document decisions regarding team level, strategy, or support needs.

3.1.4. Pre-plan to protect identified values at risk. Require development of PACE options for prioritized values at risk before operational tempo exceeds the team's ability to adapt safely.

3.1.5. Create a logistical and operational feedback loop that compares ordering lead times versus fire growth windows. Require leaders to routinely evaluate whether planning and ordering cycles are realistically aligned with fire spread rates and operational constraints, and to adjust strategy or orders according with the fire environment. Establish an expectation that fire leadership actively assesses whether ordering speed, mobilization timelines, and integration capacity are keeping pace with fire growth and environmental change.

Finding 3.2: Fire information and intelligence did not keep up with how fast the incident was changing during the most critical operational periods and was not readily shared to create a clear operational picture.

During July 12–13, incident action plans and associated planning products did not keep pace with a rapid rise in incident complexity, making it difficult for personnel to have a current understanding of fire behavior and strategy. This lag contributed to time spent double-checking facts and, at times, acting on outdated information. For example, there was uncertainty about the presence and role of a sensor-equipped multi-mission aircraft (MMA) with full-motion electro-optical/infrared capability and whether

its imagery was available to ground personnel. Although the aircraft team reported transmitting electro-optical/infrared data to WIDC, there was no record of this information being shared with incident personnel or key decision makers.

Recommendations:

3.2.1. Require external review of fire information and resource needs for incidents to ensure current and predicted conditions can keep pace with operational demands. This should be required when a management strategy other than full suppression is selected (e.g., confine and contain or point protection and containment). An external review should be conducted by a FMO and qualified AA. A review should include current and predicted fuels and weather conditions, including current and expected resource commitment and anticipated resource needs for the duration of the incident.

3.2.2. Order preemptive intelligence staffing to support localized prioritization and interpretation of fire behavior and growth. Pre-position single-resource intelligence functions (e.g., Strategic Operational Planner, Long-Term Analyst) during forecasted high-risk periods. This could be supported locally or regionally.



July 28, 2025: Dragon Bravo Fire smoke plume seen at night over a campsite.

3.2.3. Require dispatch and incident leadership to log key intelligence products and key findings in authoritative records. Ensure intelligence milestones are documented in WildCAD or event logs so intelligence does not get lost or remain informal or reconstructive. This should enforce WildCAD entries during critical operational periods. Updated standard operational procedures should require that essential incident milestones—such as structure loss, significant fire growth, resource needs, or emergent hazards—are documented in WildCAD even during peak workload periods to preserve an authoritative operational and legal record. There should also be clear expectations for what information must be captured and designated responsibility to prevent intelligence gaps during high-tempo operations.

3.2.4. Establish standard operating procedures to make information and intelligence from MMA flights readily available in a central repository. There should be an end-to-end procedure for MMA data that specifies who receives aviation/intelligence products, who interprets/synthesizes them, how they are disseminated (Operations, Planning, and AA), and where they are archived for retrieval (such as the NIFC FTP Server).

Finding 3.3: The interagency dispatch center lacked the capability and infrastructure needed to support emergency response needs and complex incidents.

Critical events on the North Rim were not reported or recorded in a single, centralized dispatch log, which led to record gaps and an incomplete awareness of the rapidly escalating fire environment. Critical information about fire behavior, resource status, infrastructure impacts, and life-safety concerns had to be

reconstructed later from memory, partial logs, and informal notes, rather than from an authoritative dispatch and recording system.

Currently, the WIDC has no dispatch recording device(s) for frequencies assigned that meet requirements outlined in the DOI Department Manual 377. This policy states "all dispatch centers will be equipped with a logging recorder, and copies of all recordings will be treated as official records. They will be stored, archived, and disposed of as per official records procedures" for frequencies that are regularly and routinely used by DOI agencies. The absence of a defined process for recording North Rim radio traffic, documenting significant events in real time, and providing redundancy when primary systems were degraded created a vulnerability both for operations during the incident and for learning afterward.

There was a lack of documentation in the dispatch record (WildCAD) that communication or information was shared between the fire and WIDC during the most critical fire times (e.g., when structures burned). This could have supported a clear operational picture to prioritize the fire to receive more resources and provided local, regional and national leadership better situational awareness on what was happening on the ground.

The WIDC lacks the information technology (IT) infrastructure and support needed to operate as an emergency dispatch center. The dispatch center's network capacity and bandwidth are inadequate and regularly experienced phones that are inoperable and frequencies become unreliable and do not work. This is demonstrated by three SAFENETs, eight USDA WIDC Help Desk Tickets, and one SAFECOM that were submitted reporting issues during the fire season with little to no support. Between the agencies supported by the WIDC, there are no specific Radio Technicians or IT personnel that support the KNF or GRCA. Issues identified in USDA Helpdesk tickets, SAFECOMs and SAFENETs regularly go unresolved.

Recommendations:

3.3.1. Evaluate infrastructure needs and dispatch center locations to ensure their ability to support complex incidents. DOI, USFS and National Association of State Foresters should evaluate Northern Arizona and Southern Utah interagency dispatch centers on their ability to support emergency response needs and complex incidents. This should be a non-bias assessment that considers dispatch locations, including the possibility of facility consolidations and infrastructure needs, such as bandwidth and upload/download speeds and radio equipment.

3.3.2. Assess the establishment of a national public safety radio network that is only for wildland fire and meets industry standards. These networks should be designed to be truly interagency and interoperable and be robust enough to handle continuity of operations plans if needed. This should include requiring pre-planned redundancy when primary dispatch or recording systems are unavailable and ensuring alternate dispatch centers, mirrored recording, or field logging protocols are in place, so critical communications are never dependent on a single system.

3.3.3. Evaluate the need for 24/7 and emergency IT support that can provide immediate and specialized assistance when there are network issues. There should be direct access for agency radio technicians or other qualified personnel for IT support to address these issues timely.

3.3.4. Ensure agency policy is consistently followed to record and store dispatch recordings and related documentation for frequencies utilized at interagency dispatch centers. This should be done by developing or updating consistent policy for DOI and USFS, regardless of who owns the frequency license. This should define which channels and events are continuously recorded, how decision-critical actions are logged in real time, and how records are retained, reconciled, and made accessible to leadership and reviewers. If needed, additional policy or guidance should be developed by DOI and USFS to ensure that this can be completed in an interagency environment.

3.3.5. Address radio congestion and interoperability. Identify common command and operations channel groupings, ensure frequency availability and training, and resolve staffing or technical gaps that degrade information clarity.

Theme 4: Evacuation and life safety plans were executed but lacked proper planning, comprehensive implementation, and coordination.

The performance and reliability of evacuation and life-safety practices at the North Rim were carried out under time compression. In a remote WUI setting with a single primary egress route, where a mixed population (visitors, contractors, NPS employees) evacuation functioned as a tightly coupled system: small delays, ambiguous triggers, or personnel accounting gaps rapidly cascaded into life-safety risk.

When robust and viable plans for evacuation are tested and communicated to all affected individuals, evacuations should have been conducted with clarity and adequate safety margins. Evacuations trended toward reactive, improvised action, that may have increased both physical exposure and psychological stress for evacuees and decision makers.

Finding 4.1: Identified safety zones, evacuation routes and shelter-in-place locations did not meet the anticipated safety needs of responders or employees.

In the 2024 GRCA Evacuation Plan, identified "Safety Zone" locations such as Cape Royal parking, W1 Basin, and the North Kaibab Trail (NKT) below Supai Tunnel were not field-validated against crucial life-safety factors. These factors included fuel and vegetation conditions, radiant heat potential, ember exposure, proximity to HAZMAT, realistic travel time, and real time accessibility under fire and smoke conditions. The "North Kaibab Trail below the Supai Tunnel" option involved a challenging 14-mile trail segment through dense vegetation, with increased risks due to fire presence and travel duration. In addition, route viability was not verified in real time or prior to a likely scenario for both the NKT and other safety zones specified in the plan.



July 31, 2025: Rio Grande Hand Crew, Div L.

The "North Kaibab Trail below Supai Tunnel" is listed as a safety zone, but it does not meet the accepted wildland fire standards. This may have misled personnel about what constitutes a survivable refuge when used in a wildfire situation. The trail was used by two GRCA employees escaping the fire the night of July 11. Additionally, responders used a helibase as a safety zone which lies within 200 feet of the wastewater treatment plant, a potentially high-risk location because of stored chlorine gas cylinders. Neither the written evacuation plan nor documented fire safety briefings indicated the helibase as a viable safety zone when wildfire impacts the area.

The plan did not clearly differentiate between areas requiring evacuation (where life safety becomes untenable), routes (how people can move), and refuge/shelter or safety zone locations (where people can survive without life and safety concerns if they cannot move).

This lack of distinction may have fostered false confidence in options that may not have been survivable. Fire structure crew and other employee statements and actions revealed leaving, or attempting to leave, the North Rim developed area was the best chance to avoid being burned over by the wildfire despite Fire Station 3 and the Grand Canyon Lodge parking lot verbally being discussed by responders as "safety zones".

Planning products and the shared understanding of safety zones, evacuation routes, shelter-in-place or refuge locations did not align with operational reality, increasing risk by suggesting a margin of safety that ground conditions did not or may not have supported.

Recommendations:

4.1.1. Update and validate all emergency management plans. Plans (evacuation, emergency response, structure protection, etc.) must have input from emergency managers and wildland and structure fire program experts and must ensure proper definitions, plan validation and dissemination, and annual drills. When accounting for wildfires, plans must clearly distinguish evacuation routes, safety zones, and shelter-in-place locations, include mapped decision triggers, and be field-validated against hazards such as fuels, radiant heat, travel times, local HAZMAT, and worst-case smoke conditions and accessibility.

4.1.2. All wildland fire safety briefings should include discussion and clarification on all anticipated safety zones, evacuation routes, as well as unique hazards. This action will affect the validity of those pre-identified locations, consistent with standard wildland fire terminology and accepted standards found in the Interagency Standards for Fire and Fire Aviation Operations (Red Book) and the NWCG Interagency Response Pocket Guidebook (IRPG).

Finding 4.2: The North Rim visitor evacuation was carried out successfully and without reported adverse outcomes, but this was not due to preemptive decision making by GRCA leadership or the fire management team.

On July 10, at approximately 1800 the order to evacuate visitors from the North Rim was issued due to the threat posed by the nearby White Sage Fire, which endangered the closure of Highway 67, the only road egress from the North Rim developed area. The initial evacuation request was made by the White Sage Fire IC, rather than being executed by GRCA leadership or the Dragon Bravo Fire IC. The GRCA leadership and Dragon Bravo Fire IC did not adequately anticipate the scale and time demands of a North Rim evacuation when calibrated by the actual Dragon Bravo Fire growth rate and potential. The Dragon Bravo Fire was approximately 1.6 miles from the edge of the developed area on July 10, with an estimated 750 visitors, employees and concessionaires still present in the area.

The visitor evacuation took approximately five hours with final sweeps and accountability discussions extending into the early morning of July 11. The employee and concessionaire evacuation spanned about three and a half hours on the afternoon of July 11. At this point, fire growth had prevented the evacuation of at least 50 mules (owned by Canyon Trail Rides), which were eventually released from their corrals to reduce the chance of fire entrapment.

Interviews and fire growth analysis indicated that if the visitors were not evacuated on July 10, then the outcome may have resulted in serious logistical challenges and elevated life and safety risk of 750 visitors as well as employees, and concessionaires.

Records do not show a comprehensive, time-stamped personnel accounting document that consolidated who departed, when they left, by which route, under what authority or trigger, and how their safety or arrival was verified, particularly concerning concession employees, contractors, and other non-NPS groups. A GRCA incident management team was formed to handle the visitor, employee, and concessionaire evacuations, but implementing a large scale and complex full evacuation of the North Rim developed area presented challenges in a time sensitive situation with success hinging on the preemptive actions taken by the White Sage Fire IC.

Recommendations:

4.2.1. Define internal evacuation thresholds independent of external triggers. Establish and document internal decision thresholds, authority, and logic for evacuation that do not rely on external incidents or requests to initiate action.

4.2.2. Ensure emergency management decision points are trained through scenario-based drills. Require GRCA leadership and fire management personnel to train evacuation decision points through realistic, scenario-based exercises.

4.2.3. Explore technology solutions to assist in NPS and concession employee tracking and communication. Improve communications platforms in remote areas and dead zones with available, current technology. Systems should ideally provide auditable, time-stamped tracking

for visitors, employees, concessioners, and contractors, documenting who evacuated, when, by which route, under what authority, and confirmation of arrival or safety.

Finding 4.3: Concessionaire evacuation plans were not tiered to the GRCA Evacuation Plan.

Per their contracts, concessionaires must create their own evacuation plans that are tiered off of the park plan. Some concessionaires did not include required components of the 2024 GRCA Evacuation Plan. None of the North Rim concessionaire's evacuation plans were included as addendums in the 2024 GRCA Evacuation Plan as required. There is also no documented evidence of required annual coordinated wildland fire evacuation drills for the 2024 GRCA Evacuation Plan nor the concessionaires.

Recommendations:

4.3.1. Ensure evacuation and communication protocols are jointly exercised. Require NPS and concessionaires to regularly exercise and verify integrated evacuation and re-entry, with documented results and corrective actions.

4.3.2. Standardize and integrate contractor evacuation checklists. Ensure contractor and concessionaire evacuation tools are standardized and fully integrated with NPS incident authority, triggers, and tracking.

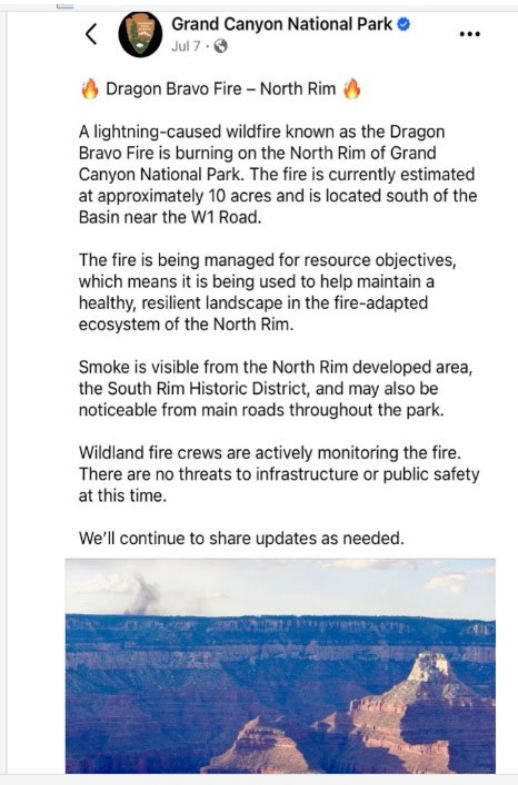
Theme 5: Communications challenges may have eroded public trust.

While the Dragon Bravo Fire began on July 4 as a small, lightning-caused fire with little public interest, it rapidly evolved over the course of one week into a major, complex incident that garnered widespread domestic and international attention. During the escalation of the fire, the GRCA became increasingly challenged with incident messaging and the communication pace.

Finding 5.1: Insufficient communications guidance contributed to inconsistent messaging on the fire strategy.

Interview subjects expressed concerns that inconsistent messaging by GRCA and NPS regarding the Dragon Bravo Fire management strategy may have eroded public trust. This largely centered on the perception that the NPS was "changing the narrative" or was "hiding things" on how it had initially managed the fire.

The record demonstrated that the GRCA fire staff and AA were directly engaged in reviewing and approving most, if not all, public information prior to release during the initial phase of the fire. While the information was accurate, inconsistent use of terminology may have contributed to public confusion on how the fire was being managed.



July 7, 2025: Grand Canyon National Park Facebook post

GRCA posted initial public information about the Dragon Bravo Fire to its social media channels on Monday, July 7. The post stated that the 10-acre fire was being "managed for resource objectives." NPS Headquarters fire staff saw the social media post and contacted the Intermountain Region FMO and GRCA FMO to clarify that "we are not 'managing' fires this year." There is no indication that this management posture had been previously communicated to Park-level leadership or public affairs staff.

GRCA subsequently adjusted messaging to include the technical term "confine and contain" to describe the fire management strategy. This language was consistent with the "100% confine/0% full suppression" strategy identified in the WFDSS decisions published on July 6 and July 9.

On July 10, a GRCA park alert published regarding the North Rim visitor evacuation reverted back to the original messaging, stating that the Dragon Bravo Fire was being "managed for resource objectives" with no mention of confine and contain or any suppression activities. Another July 10 post continued to use the "confine and contain" terminology. A July 11 post did not mention strategy.

On July 12, after North Rim structures were impacted, a GRCA social media post stated for the first time that fire crews were engaged in "a full suppression strategy." This was consistent with full suppression activities that were now occurring on the ground, though WFDSS would not be updated to reflect a "100% full suppression/0% confine" strategy until July 13.

Interview subjects also highlighted that at public meetings held in Fredonia and Page, Arizona, in August, NPS staff utilized talking points that described "confine and contain" as a "full suppression" strategy. Some interview subjects indicated that they believe this created a public perception that NPS was changing its story on how the fire was initially managed.

The NWCG's Glossary of Wildland Fire-PMS 205 defines "confinement" as "the strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions and use of natural topographic features, fuel, and weather factors." It defines "suppression" as "all the work to extinguish or limit wildland fire spread." In this usage, they are not mutually exclusive terms – a fire management strategy can use suppression in conjunction with

confinement. However, in WFDSS, “Confinement” and “Full suppression” are listed as two distinct fire management strategies.

In the absence of a clear national or regional seasonal fire posture and related communications guidance, these discrepancies may have contributed to mixed and inconsistent use of terminology and messaging by various GRCA and NPS officials throughout the initial phase of the fire. Interviews indicated even senior leaders appeared confused by the terminology. Additionally, it was noted that several elected officials also used inconsistent or incorrect terminology in public statements, further exacerbating the situation.

Recommendations:

5.1.1. Issue a clear seasonal national or regional fire posture with an accompanying communications plan. Require DOI to publish an annual national or regional fire posture and communications plan that clearly explains strategic intent, decision authorities, and terminology, ensuring consistency across line officers, fire staff, and communicators at all levels.

5.1.2. Require preseason coordination briefings. Ensure fire leadership, park leadership, and communications staff receive national or regional joint preseason briefings on fire posture, management strategy, communications, and other key coordination topics.

5.1.3. Align seasonal communications guidance with technical wildland fire terminology and decision tools. Ensure the seasonal communications plan explicitly aligns with terminology in WFDSS and definitions used in the NWCG’s Glossary of Wildland Fire PMS 205, to prevent conflicting descriptions of management strategy. Consider including a “terms to use” quick reference guide as part of the seasonal communications toolkit.

5.1.4. Engage elected officials early and consistently. Require early engagement with elected officials using standardized definitions, context, and talking points so external statements reinforce, rather than contradict, official incident communications.

Finding 5.2: Absence of Grand Canyon Park leadership at initial public meetings may have negatively impacted public perceptions.

The CIMTs organized three in-person public meetings in August in the nearby town of Fredonia (on August 5 and 18) and city of Page (on August 6). The AA on duty in August attended the August 5 and 6 meetings, GRCA park leadership did not. The GRCA Superintendent did attend the third public meeting on August 18.

Interviews yielded conflicting accounts of why no local park leadership attended the first two meetings. The GRCA Superintendent was on leave, and the record indicates there was lack of clarity at GRCA about who was acting behind the Superintendent at the time of the first two public meetings. Interviews noted that the absence of local park leadership at the first two meetings may have contributed to a public perception that NPS was avoiding answering direct questions about how the fire was initially managed.

Interviewees described public sentiment at the first meeting as “hostile,” “angry,” and “outraged.” By the third public meeting, one interviewee described the community as “resigned” to the fact that they were not going to get answers from NPS. Interviewees also suggested that years of frustration with the KNF about the lack of active forest management, such as reductions in logging, contributed to the local community’s sentiment that the fire was the result of public land management practices.

Recommendations:

5.2.1. Separate Superintendent and Agency Administrator roles for high-visibility incidents. Ensure superintendents of large, high-profile parks are not simultaneously serving as AA during complex incidents when sustained public engagement is required.

5.2.2. Require the superintendent to attend public meetings. Require local park superintendents or an alternate senior-level local park official to attend public meetings for high-visibility incidents, consistent with the Superintendent’s Desk Reference For The Fire Program Management. Establish a clear delegation plan to ensure a visible, authoritative park leadership presence at public meetings when the superintendent is unavailable.

5.2.3. Align public engagement responsibilities with incident complexity. Require early identification of public meeting needs and assignment of qualified leadership representatives proportional to incident visibility and public concern.

5.2.4. Document public engagement responsibilities in delegations and incident plans. Ensure expectations for public-facing leadership roles are documented in delegations, incident action plans, and communications annexes.

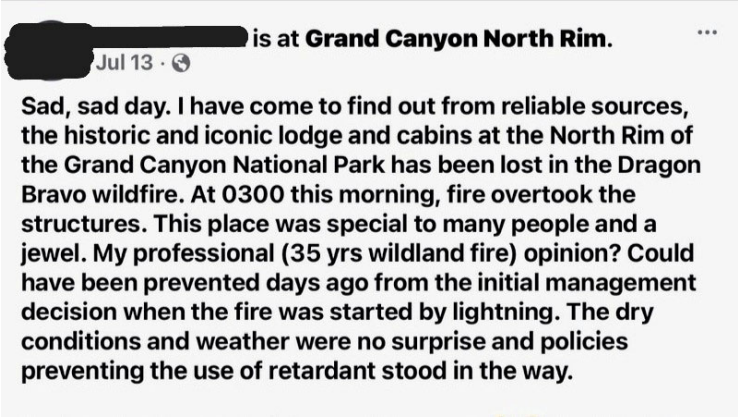
Finding 5.3: A rapidly evolving fire, minimal public affairs staffing, and release of unofficial information contributed to communications challenges.

GRCA staff utilized a variety of channels to distribute fire and evacuation information to the public. There was only one GRCA public affairs officer assigned to the park during the initial management of the fire, and there was no fire Public Information Officer (PIO) assigned until Southwest CIMT 2, making it impossible to provide 24-hour communications coverage. As a result, GRCA's public information efforts were unable to keep pace with the rapid escalation of the fire. There is no record that GRCA requested additional PIO support to provide 24-hour coverage during the first week of the fire.

An external interviewee noted that GRCA communications were "not timely" and internal interviewees noted GRCA had "an extremely difficult time staying ahead of the narrative" and that there were "concerns about how nimble we are able to provide information to the public."

The situation was further complicated by the unofficial release of information by firefighters that occurred as the fire burned high-value structures on the North Rim during the overnight and early morning hours of July 12-13. The WildCAD record shows an entry at 0400 on July 13 noting that the historic Grand Canyon Lodge was burning. Within a few hours, information about the burning lodge was shared externally and began circulating on social media, generating public reaction before the GRCA public affairs officer could issue an official statement.

According to interviewees, communication challenges have continued during the recovery process. In October, images of the Grand Canyon Lodge demolition were shared online. GRCA staff believe the images were likely shared by a contractor conducting work on the North Rim. This review was unable to confirm the source of the photos, but they were not an official release by the Park.



July 13, 2025: Unofficial Facebook post announcing that the Grand Canyon Lodge had been lost to the Dragon Bravo Fire.

Recommendations:

5.3.1. Establish 24-hour public affairs coverage to rapidly share information on evolving incidents. As noted in the Superintendent's Desk Reference to Fire Program Management, "every fire has potential...expect the unexpected." In order to be positioned to respond to rapidly escalating incidents, primary and back-up/on-call PIO should be identified for evolving incidents. For parks with only one (or no) permanent public affairs specialist, this may involve training other park employees to serve as collateral Fire PIOs, utilizing other DOI public affairs staff as back-up/on-call PIO assets, requesting Severity PIO resources, or potentially hiring additional full-time or seasonal PIOs at larger or more complex parks.

5.3.2. Coordinate communications cadence with operational milestones. Ensure communications staff are fully integrated into the 24-hour incident operations tempo so public updates keep pace with incident developments and reduce reliance on unofficial sources.

5.3.3. Expedite official information release during high-profile incidents. Develop procedures that allow for faster, coordinated release of verified incident information and imagery to reduce information vacuums that drive misinformation and erode trust.

5.3.4. Set clear expectations and require preseason and incident briefings on information release expectations. Mandate preseason and incident check-in briefings for employees and contractors that clearly outline expectations for information release, photography, and social media use related to official duty and any consequences for violating official policy.

5.3.5. Include explicit contractual language governing information release. Ensure contracts include clear provisions (consistent with the Federal Acquisition Regulation and DOI Acquisition Regulations) defining the review and coordination process for release of information related to federal contract performance.

Theme 6: Responders experienced significant safety and exposure hazard risks in the complex WUI environment.

Significant safety and exposure concerns were present for evacuated employees and fire personnel that responded and worked in the North Rim developed area. When the Dragon Bravo Fire evolved into a WUI incident, it increased health and safety risks for firefighters and other responders particularly when structures, utility infrastructure, and HAZMAT burned.

Finding 6.1: Responders experienced significant exposures to occupational health hazards from fire impacted infrastructure across multiple shifts without exposure mitigations or controls.

Crews simultaneously battled a spreading wildland fire and protecting buildings, which involved managing embers, burning structures and equipment, dense smoke, falling hazards, and, at the water plant, toxic chlorine gas. Combined with heavy exposures to hazards commonly experienced in wildfire suppression operations (e.g., hazard trees, extreme heat and fire behavior, and heavy smoke), personnel contended with concerns about electrical systems and generators damaged by the fire.

Wildland fire personnel dealt with a vast scope of burned items (e.g., structures, vehicles and other equipment, propane tanks). Fire crews did not receive adequate training to engage with structural fire response and did not have approved respirator (e.g., Personal Protective Equipment (PPE)) that meet regulatory requirements. In addition, structural firefighters did not utilize respiratory protection or have complete access to structural fire PPE. Essential safety tools, such as written hazard controls, briefings, and a dedicated safety officer, were not implemented early enough to systematically identify these risks or to align tasks with the appropriate gear and qualifications.



November 10, 2025: Burned vehicles at the North Rim administrative area.

The Interagency Standards for Fire and Fire Aviation Operations (Red Book) states that wildland firefighters should not engage in direct suppression actions encountered on structure fires. Structure protection activities will be limited to exterior efforts, and only when such actions can be accomplished safely and in accordance with established wildland fire operations standards. The Red Book (chapter 7) states, “Managers and supervisors will not knowingly place wildland firefighters in positions where exposure to toxic gases or chemicals that cannot be mitigated and would require the use of self-contained breathing apparatus.” Employees should only engage in wildland fire response tasks commensurate with their capabilities, training, and officially documented qualifications. Federal wildland firefighters are not provided adequate training or PPE to control exposure hazards associated with a WUI fire.

Recommendations:

6.1.1. Evaluate current policy, guidance, and direction governing wildland firefighter engagement in WUI environments. Review and clarify existing policy on what wildland personnel may and may not do when fire suppression involves structures, utilities, and HAZMAT, and ensure expectations are clearly articulated and consistently applied.

6.1.2. Train to and enforce policy boundaries for wildland personnel in WUI fire environments. Ensure training reinforces expectations and limits on wildland firefighter engagement with structural fire and HAZMAT hazards, consistent with policy, and aligns assigned tasks with qualifications, personal protective equipment, and exposure controls.

6.1.3. Assess the need for respiratory protection appropriate to WUI hazards. Evaluate whether additional respiratory protection is required for anticipated WUI hazards and develop clear guidance for structural firefighters on when respirators (self-contained breathing apparatus) are required during WUI operations. This process should be done through a hazard assessment and consistent with regulations from the Occupational Safety and Health Administration (OSHA).

6.1.4. Expand safety officer and Agency Administrator training to include occupational health hazards. Ensure fire safety officers are trained to recognize, assess, mitigate, and communicate occupational health hazards (e.g., toxic gases, contaminated ash, infrastructure hazards) in addition to traditional fire line safety risks. Ensure AAs receive training on occupational health hazards and understand exposure and possible health risk decision making responsibilities.

6.1.5. Require early assignment of qualified safety officers for incidents that may include the WUI. Ensure qualified fire safety officers with experience in occupational health exposure mitigation controls are ordered early when WUI threats emerge.

Finding 6.2: Hazardous materials, such as chlorine, were not properly considered or built into operational planning, briefings, or trigger points.

Critical hazards, such as the chlorine inventory and the potential for gas release at the waste water treatment facility, were not appropriately included in briefings or decision making tools. This oversight persisted even though the plant eventually burned, releasing chlorine and necessitating firefighter and visitor evacuations. Pre-incident documents acknowledged the chlorine hazards at the North Rim water treatment plant, yet this information was not translated into clear map overlays, buffer zones, or directives (e.g., “if fire reaches here, then do this”) for incident leaders and crews. In addition, wastewater related infrastructure and proximity hazards were not consistently translated into operational constraints (e.g., staging, refuge options, and tactical positioning). When the plant caught fire on July 12, resulting in a release of chlorine gas, firefighters had to retreat, inner canyon visitors were evacuated, and the use of aircraft was restricted. Interviews indicated that some personnel worked nearby without fully understanding the extent of the gas present or the conditions that would necessitate evacuation. On-site personnel were not trained or equipped to handle this HAZMAT incident. On July 15, local HAZMAT specialists were able to access the scene and cleared the hazard, three days after the original release.

Recommendations:

6.2.1. Incorporate fixed-facility HAZMAT inventories into operational maps, preplans, and briefings. Require known HAZMAT inventories (e.g., chlorine) to be reflected in Fire Management Plans, WFDSS decisions, incident action plans, and briefing materials, including buffer zones and exclusion areas.

6.2.2. Define and document trigger points for HAZMAT protective actions. Establish clear triggers for evacuation, staging changes, airspace restrictions, and HAZMAT ordering, and ensure these are included in IAP safety messages and decision documentation.

6.2.3. Establish rapid ordering pathways for HAZMAT support. Ensure preseason agreements and ordering mechanisms exist to obtain HAZMAT expertise and response resources within timeframes that match location constraints.

Finding 6.3: Hazardous materials exposure concerns were expressed but were not properly assessed and may not have been properly mitigated.

Fire personnel may have potentially been exposed to HAZMAT while disturbing contaminated soil, ash and debris in the North Rim developed area after the initial fire response. Fire personnel expressed concern working in areas that may have had ash, debris, and underlying soil which may be contaminated with hazardous substances such as asbestos and lead from the burning of man-made materials and historic structures. A SAFENET was published (#20250822-0001) stating concern that non-critical hazard tree removal work was directed in the North Rim developed area and possibly exposing fire personnel to asbestos that may have been in the ash and debris of historic structures. A NPS HAZMAT coordinator conducted an exposure assessment of the particulate matter exposure during one operational shift. These results were discussed with the NPS industrial hygienist (IH), who recommended bringing a qualified IH

on site to confirm the sampling and further support the operation. Upon further review with the DOI IH Manager, the methods used to estimate exposure to asbestos from particulate matter were not adequate to properly assess exposure in this environment.

Recommendations:

6.3.1. Establish and implement standard operating procedures to assess post-fire exposure hazards in the WUI environment to be conducted by qualified occupational health professionals. Require standard operating procedures (SOPs) for assessing ash, debris, and underlying soil contamination (e.g., asbestos, lead) before assigning personnel to work in burned developed areas. Establish pre-incident agreements (e.g., DOI IDIQ mechanisms) to ensure qualified industrial hygienists can be deployed quickly to assess hazards and advise AAs and IMTs. Assessments will use appropriate sampling protocols, PPE standards, and provide exposure control recommendations based on hazard assessment results.

6.3.2. Define authority to pause or modify work pending hazard assessment. Clearly establish who has authority (AA or IC) to suspend or restrict operations when potential exposure hazards are identified but not yet assessed.

6.3.3. Provide clear risk communication and exposure documentation to personnel. Ensure personnel assigned to work in contaminated or potentially contaminated environments receive documented information on the exposure and health risks, how to mitigate the hazards and how personnel may document this exposure for their records.



July 13, 2025: GRCA personnel addressing Grand Canyon Lodge fire with garden hose.

Finding 6.4: Information regarding occupational hazards from the WUI environment were not shared with potentially exposed fire personnel or incident management teams.

Fire personnel faced potential exposure to smoke, burning structures, vehicles, propane tanks, and a damaged waste water treatment plant. Concerns were raised by fire personnel on-scene and after demobilization about the lack of information shared on hazards in the work environment. A safety officer from the Type 3 Northern Arizona team created documentation on possible WUI exposure hazards for local personnel to keep as a record of exposure; however, nothing similar was shared with all responders that may have been exposed to these hazards.

Later, as crews operated amidst ash and debris around burned historic buildings, vehicles, and utilities, little information was shared with personnel working in these areas about possible exposure hazards. Despite being identified by safety officers, AAs allegedly did not want to widely communicate possible asbestos hazards risks from working in the North Rim developed area. This is supported by only one safety message included in the IAP on 8/5/2026 describing asbestos in the environment but no information on the possible health risk or how to mitigate the hazard.

Recommendations:

6.4.1. Develop standardized guidance and templates for documenting and communicating hazardous exposures. Establish a consistent process for AAs and IMTs to document potential exposures, including standardized notification templates and approval authorities. Ensure it is clear that Line Officers, AAs, or delegated authorities are responsible for determining when exposure notifications or letters are issued.

6.4.2. Ensure employee awareness of exposure reporting systems and processes. Reinforce awareness and use of the exposure reporting systems and processes so employees and contract personnel can document and maintain exposure records.

6.4.3. Require IAP safety messaging to consistently reflect WUI occupational hazards. Ensure IAP safety messages explicitly address WUI-specific hazards that describe information about the exposure hazard, possible health risks and how to mitigate exposures.

Theme 7: Preparedness, readiness, and coordination across programs were misaligned.

Actual preparedness, readiness, and coordination of GRCA programs had a role in wildland fire response, especially involving a WUI incident. A detailed compliance review identified numerous deficiencies across structural fire protection, WUI preparedness, water and fire-flow systems, respiratory protection, HAZMAT management, and process safety programs. These issues primarily reflected fragmented accountability, inconsistent inspection and tracking mechanisms, and gaps between policy requirements and operational implementation, rather than isolated errors or individual faults. The deficiencies spanned multiple regulatory and policy frameworks and best industry practices. Collectively, they demonstrated the need for integrated governance, centralized tracking of deficiencies to closure, and clearer assignment of authority across fire, facilities, utilities, safety, and concession operations.

Small gaps in mitigation, inspection, or coordination went unnoticed by GRCA leadership until the Dragon Bravo Fire tested the system, narrowing response options and reducing probability of success. Specifically, the North Rim relies on remote logistics, and water, power, wastewater, and communications systems with reduced capacity and limited to no backups. These findings should be treated as a roadmap for system evaluation, redesign and sustained compliance rather than as a checklist of discrete corrections. Detailed findings and recommended corrective actions are documented in Appendix C.

Finding 7.1: Wildland fire, structure fire, and other GRCA programs did not function as one integrated team to adequately respond to a WUI incident.

As the Dragon Bravo Fire evolved, wildland fire, structural fire, and facilities/utility operations were not provided clear, effective or coordinated direction for suppression or structure fire defensive actions in the North Rim developed area when structures were threatened. As spot fires and embers impacted structures on July 11 through July 12, the operational focus shifted to defending structures and assessing infrastructure status. There was no indication of a pre-established framework for integrating structural engines, facilities staff, and utility functions into the wildland organization. This fragmented approach hindered coordinated actions during critical operational shifts.

When the Dragon Bravo Fire reached the North Rim developed area, a need for water system knowledge became paramount for adequate water distribution and isolation of damaged systems. No pre-planning or knowledgeable personnel were available or they had already evacuated. Electrical supply systems and other infrastructure hazards such as the safe chlorine gas handling at the wastewater treatment plant did not have personnel with the training and expertise to advise responders on scene.

As the fire intensified within the North Rim developed area on July 11, 2025, GRCA structural firefighters withdrew from the North Rim out of concern for safety and lack of wildland fire management operational direction.

The incoming IC on July 12 recalled firefighter and public safety and North Rim infrastructure as identified priorities from the AA, but was never informed that the Grand Canyon Lodge was a national level priority. This is highlighted by the absence of a shared structure protection priority list and a WUI suppression response protocol. In a WUI setting, the plan must have clear, predetermined answers regarding who is responsible for structure triage decisions, how facility and utility constraints influence tactics, and how cross-domain resources are organized within the incident.

In addition, there was conflicting guidance on who had responsibility for structural fire or WUI events. GRCA guidance stated fire engine companies responding to WUI situations to be under the command of the wildland fire IC. The Red Book states, “all fires that are not wildland are considered structural and are subject to the requirements and standards of Director’s Order and RM 58 (Structural Fire Management). All employees responding to structural fires must meet or exceed the qualifications, training, standards and regulations identified in Director’s Order and RM 58.”

Recommendations:

7.1.1. Ensure the responsibility of structure triage and protection is clearly defined. Define which ICS role is responsible for structure triage decisions to eliminate ad hoc prioritization during crisis conditions.

7.1.2. Develop an integrated WUI protection plan that explicitly connects wildland and structure fire programs, facilities, and utilities into a single operational concept. Establish a unified structure protection framework that aligns wildfire suppression, structure defense, utility continuity, and life-safety actions into a coordinated operational approach. Ensure this plan clearly defines responsibilities, authorities, and interfaces across all programs so that roles are understood and executable when operational tempo is high. The implementation of a shared plan for wildland and structural operations should consider structure protection equipment needs, hydrant maps, priority asset list, possible water impairments or availability, hazard material or safety concerns and a WUI zone map. The plan should clearly define how infrastructure constraints (e.g., water pressure limitations, utility shutoffs) could affect tactics, decision making, and structure defense operations.

7.1.3. Plan and run regular exercises where all relevant programs participate to prepare and respond to a WUI incident. Conduct recurring, scenario-based exercises that require joint participation by wildland fire, structural fire, facilities, utilities, safety, concessions, and park leadership to build shared understanding of responsibilities, authorities, and resources to properly respond. Exercises should include realistic WUI conditions such as structure defense triage, evacuation and personnel tracking, coordination of utilities and facilities, and HAZMAT or safety concerns.

Finding 7.2: WUI defensible space preparedness and readiness was not run as one coordinated program.

Evidence indicated the predominant cause of structure loss in the North Rim developed area was wind transported ember exposure that resulted in top-down ignitions (roof/attic involvement), rather than direct flame impingement on most structures. Structures were lost despite some having a noncombustible roof covering, which was consistent with ember entry through vents/eaves/gables or ignition of combustible siding/attachments, followed by attic involvement. Many other structures had wood shake shingle roofs (example of a top-down ignition point).

The wastewater treatment plant burned despite having a wide asphalt apron with nearby heavy equipment showing radiant heat damage without flame contact. Evidence revealed that ignition is likely due to ember deposition entry, followed by a fully involved structure radiating heat.



November 10, 2025: GRCA North Rim log cabin with shake shingle roof.

Unlike many structures impacted by embers, the Grand Canyon Lodge was ignited when fire progressed along the west side of the canyon until it ran upslope and directly impacted the lodge's southwest side. Fire then extended across the shake roof and became established in the interior. As structures became fully involved, they likely produced additional embers that increased the probability of structure-to-structure ignitions in the developed area.

The GRCA Superintendent was responsible, with advice from fire management leadership, to establish priorities and ensure vegetation treatment, clearance, structure hardening, and operational readiness were implemented in the North Rim developed area prior to the 2025 fire season. Fire response personnel observed that little, if any, wildfire risk reduction work had been completed in advance of the Dragon Bravo Fire. Fire managers cited excessive fuel loading in the developed area, including heavy vegetative growth adjacent to structures and combustible materials on roofs. GRCA leadership stated accumulated fuels and roofing materials significantly contributed to structure vulnerability and that vegetation density within the North Rim developed area had not been adequately managed.

The North Rim's defensible space program lacked a clear leader or program, and there was no consistent record keeping to confirm or enforce completion. Responsibilities were divided among facilities, wildland and structural fire programs, and the concessionaires. Although the GRCA wildland fire program was identified in existing NPS documentation as responsible for WUI preparedness, this role was not clearly implemented or coordinated in practice, as noted in the 2024 GRCA Structural Fire Program Assessment. Per RM #58, the NPS adopted International Wildland-Urban Interface Code (IWUIC), which outlines requirements for defensible space and maintenance for WUI areas to mitigate the risk to life and structures from wildland fires.

The 2024 memorandum from the NPS Director clarified approaches and authority definitions to empower parks to actively pursue the best available options to fulfill stewardship and safety responsibilities, and emphasized their responsibility to protect resources and people from fire risk. Specifically, this memo outlined information on Section 106 reviews, the National Environmental Protection Act, and funding and support for Compliance/Maintenance Activities and underscored the expectation for integrated readiness across programs.

Recommendations:

7.2.1. Require a formalized defensible space program that complies with IWUICs and applicable policy. Defensible space work should be accountable to one program, with an auditable inspection and completion tracking system that meets policy requirements. Annual preseason audits of defensible space should be completed with documented findings and corrective action plans and timelines. This should also include establishing an annual WUI fuels treatment and structure protection work plan, including the exploration of strategic fuel breaks.

7.2.2. Clarify and reinforce Agency Administrator authority to balance conservation values with operational decision making. Ensure AAs are trained, authorized, and supported to make timely decisions that appropriately balance conservation values with life safety, firefighter safety, and protection of critical infrastructure preparing for and during wildfire incidents.

Finding 7.3: The structural fire protection program did not match the complexity of the Dragon Bravo Fire.

The Grand Canyon Village, located on the Grand Canyon South Rim, receives mutual aid assistance from the Tusayan Fire District. The North Rim did not have any mutual aid agreements that could have supplemented structural fire capabilities or provided specialized needs like HAZMAT assessment. While some suggested national resource systems rendered mutual aid unnecessary, HAZMAT and structural protection often require different arrangements than standard wildland resources in remote areas.

A 2024 program assessment found the structural fire program was not compliant with many requirements that may have affected their ability to prepare and respond to a WUI incident. These included: a fire chief position was not properly graded for the complexity of the park, inadequately trained firefighters and administration for structural fire response capabilities, overdue medical and fitness evaluations, NPS owned fire hydrants not maintained and flow-tested annually, vacant fire inspector positions, insufficient personal protection equipment reserves, and lack of annual fire and life safety inspections conducted for all structures. According to the RM #58, superintendents who do not hire/fill the appropriate 0081 park structural fire chief shall stand down all structural fire suppression operations immediately.

The North Rim also lacked an adequate cache of structural protection equipment sufficient to possibly defend Tier 1 historic structures. While equipment pre-positioning may not fall solely under the structural fire program’s responsibility, there was a significant mismatch between the structure protection resources required for the North Rim and those available in terms of cache, water supply, coordination, and qualified personnel.

Recommendations:

7.3.1. Evaluate the NPS Structural Fire Program’s capability to provide WUI response support and resources. This should be done through a national external review for high-risk WUI parks. A review should assess staffing levels, training and qualifications, equipment, and the ability to meet applicable standards as outlined in RM #18 or #58. Results of the review should define

required staffing, qualifications, equipment caches, and testing cycles commensurate with park complexity. Recommendations for this evaluation should be tracked and documented for completion.

7.3.2. Establish adequate availability of structure fire personal protective equipment. As reported in the 2024 program assessment, this includes having a backup program consistent with applicable industry standards (e.g., second set/bench stock) and maintaining an inventory and inspection process.

7.3.3. Assess the current structural fire positions to match structural protection responsibilities and park complexity. As recommended by the 2024 program assessment, the current fire chief position should match the complexity of the park with regards to scope and authority. Fire inspector positions are necessary to sustain compliance, verification, and accountability. These positions should ensure structural protection systems and equipment are routinely inspected and with documentation of completion.

7.3.4. Implement a master inspection/testing/maintenance calendar across park and concession structures. This calendar should include life-safety inspections, alarms, emergency lights, hose testing, hydrant flow testing with documentation retained in an auditable system to verify compliance critical to inspection/testing deliverables.

7.3.5. Evaluate the need for mutual aid agreements in remote areas where capability may be limited. Assess and determine whether current agreements adequately support general and specialized needs. Agreements should be exercise tested with clear activation triggers and protocols to ensure agreements are executable under time compression. Interconnected programs and leadership need to understand procedures and contacts for ordering.

Finding 7.4: Gaps and deficiencies identified in program reviews remained unresolved.

In the Wildland Fire Program, fire readiness reviews were predominantly self-assessed without external oversight and lacked corrective action plans to ensure issue resolution. Although checklists indicated completion of safety training and job hazard analyses, documentation was incomplete, and the reviews did not include the GRCA safety officer, as required by the review policy, or a subordinate was interviewing a higher superior which can undermine the reliability and comprehensiveness of these evaluations.

While the 2024 structural fire program review was conducted by an external party, it did not include a time bound corrective action plan or compliance documentation, leaving identified gaps unaddressed.

The Safety, Health, and Wellness Program review conducted in 2022 did include a corrective action plan. However, several findings remained incomplete beyond their designated deadlines. Unresolved issues included leadership safety training and necessary updates to hazard communication and chlorine management plans.

Recommendations:

7.4.1. Require program reviews to be completed within identified timeframes and have corrective action plans with owners, deadlines, and verification. Reviews should include corrective action plans with due dates and enforcement guidelines to track findings.

7.4.2. U.S. Wildland Fire Service should develop policy that outlines requirements for wildland fire readiness reviews. At a minimum, reviews should be completed by a national review team every three years. These reviews should include a feedback mechanism to a national point of contact or program manager to ensure identified deficiencies are remedied.

Finding 7.5: North Rim water systems supporting fire suppression were not adequately designed or maintained to support suppression efforts during the fire incident.

When the fire impacted the North Rim developed area and certain structures, fire personnel were no longer able to access adequate pressure from the hydrants leading to lack of water for fire suppression. Four million gallons of stored water was available at the North Rim developed area, but design limitations not accounting for pressure loss in damaged sprinkler systems, pumping stations or integration of water pressure pumps as redundant systems contributed to overall failure of the system.



November 11, 2025: Structures with working sprinklers beyond where the Grand Canyon Lodge stood.

Deficiencies in inspections, documentation, and functional readiness of fire protection water components were identified. Specifically, the records indicated missed hose testing, water and fire protection systems compromised by inoperative shutoffs, faulty or non-compliant back flow valves, and untested hydrants. The highest valued historic buildings in the North Rim developed area were not equipped with exterior sprinkler systems, such as the deluge systems that are found on the South Rim.

Multiple structures within the North Rim developed area, including the Grand Canyon Lodge, were equipped with interior fire suppression (sprinkler) systems at the time of the Dragon Bravo Fire.

In 2024, certain North Rim fire suppression systems were shut off due to cross-connection control and backflow prevention requirements under state drinking water regulations administered by the Arizona Department of Environmental Quality. Documentation indicated these actions were taken to address regulatory compliance and public health requirements, rather than wildfire or fire suppression readiness considerations. The review did not identify a consolidated inventory that documented all sprinkler-equipped structures and their operational status immediately prior to the fire.

Interviews indicated that the sprinkler system within the Grand Canyon Lodge was functional when fire first impacted the structure. Responders observed that interior fire progression appeared to be temporarily slowed in portions of the building during initial involvement. Despite this effect, the structure was ultimately overcome by the fire. The extent to which sprinkler systems in other North Rim facilities were fully operational at the time of ignition could not be conclusively determined based on available records and interviews.

Given the extreme fire behavior, ember wash, and rapid structural involvement observed during the incident, it remains undetermined whether the function of any individual sprinkler system would have materially altered overall structural outcomes.

Recommendations:

7.5.1. Ensure compliance with applicable policies and National Fire Protection Association Standards for water pressure and flow. Conduct routine, documented flow and pressure testing and tie deficiencies to corrective actions with deadlines.

7.5.2. Evaluate upgrading sprinkler systems for prioritized historic buildings. Focus improvements where consequences of failure are highest in historic and critical infrastructure.

COST MANAGEMENT

A selection of key personnel were interviewed including ICs, Incident Business Advisors (INBA), AAs, and Finance Section Chiefs (FSCC/FSC3) who were all assigned to and had working knowledge of the Dragon Bravo Fire. These interviews, along with an extensive review of incident business practices, cost accounting documents, resource orders and purchasing records, showed no extraordinary, unusual or inappropriate expenses were found beyond those expected for a large wildfire. However, it must be acknowledged that the decision to manage the initial ignition under a confine and contain strategy and the subsequent escape of the fire led to significant costs commensurate with a wildland megafire.

The financial review encompassed the financial and business decisions and records during the suppression managed incident from July 4-October 11, 2025. Nothing in the review showed any irregularities related to financial or business decisions that would fall outside of the normal standard operating procedures on a large wildfire. None of the post-fire NPS costs related to the rebuilding of North Rim structures or all associated ongoing clean up and subsequent financial impacts were included in this review.

During the duration of the Dragon Bravo Fire management, five CIMTs were assigned as well as two Type 3 organizations.

The reviewed records included:

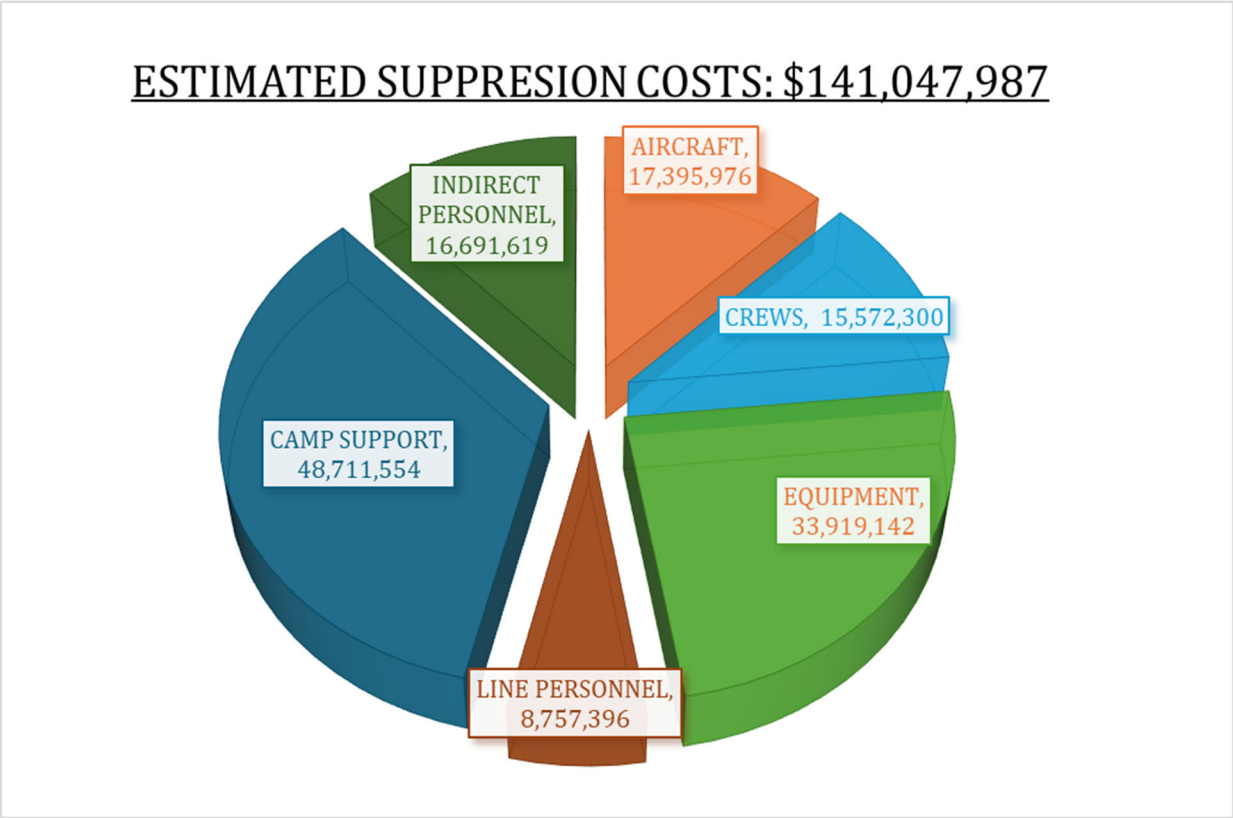
- Official agency incident documents and invoices provided in the FireNet eDoc box. (FireNet eDoc box is the official repository for all federal incident suppression related actions, which include all suppression financial records, etc.)
- eIsuite cost reports and tracking for review of extravagant or irregular cost surges.
- Buying team and purchasing logs, invoices, incident contracts and agreements.
- Aviation and retardant invoices and logs.
- Logistical purchasing by both local units and the CIMTs.

Dates of surging daily spend rates are listed below. These costs were not unusual or inappropriate, only informational to show spikes in costs related to higher daily rates on particular days:

- July 13: Retardant and heavy aviation utilized
- July 19-23: Retardant and heavy aviation utilized
- July 15-17: Hand crews ordered and assigned, which continued throughout the incident.
- August 1-3: Heavy helicopters utilized

The team found spending rates matched resource use with cost surges only on a few specific dates related to aviation, retardant, and hand crew deployment. The summary and data included below show the initial estimate of suppression costs categorized by resource type. Outside of those appropriate cost surges, no outliers were found to indicate any non-industry standard financial or business practices or related charges.

Categories and initial estimate of the suppression related costs from July 4 through October 11:



ASSIGNED RESOURCE TYPE	COST ($)*
AIRTANKER	6,251,096
FIXED WING AIR	743,456
HEAVY HELI	6,216,223
LIGHT HELI	2,071,816
MEDIUM HELI	631,109
OTHER EQUPMENT	854,465
RETARDANT	627,811
AIRCRAFT	**17,395,976**
HANDCREW-TYPE 1	3,086,431
HANDCREW-TYPE 2	8,110,549
HANDCREW-TYPE 2 IA	4,375,320
CREWS	**15,572,300**
DOZERS	1,561,392
ENGINES	8,476,890
OTHER EQUIPMENT	22,690,360
WATER TENDERS	1,190,500

LINE EQUIPMENT	**33,919,142**
DIRECT PERSONNEL	8,757,396
LINE PERSONNEL	**8,757,396**
DIRECT LINE SUPPORT SUB-TOTAL	**$75,644,814**
INDIRECT PERSONNEL	16,691,619
CAMP PERSONNEL	**16,691,619**
BUSES	129,948
CAMP CREW	1,200,561
CATERER	5,810,823
FACILITIES/OTHER	17,579,206
LOWBOY/TRANSPORT	52,100
MOB/DEMOB	1,976,715
OTHER EQUIPMENT	5,250,728
RESCUE MEDICAL	5,524,072
SHOWERS	391,716
SUPPLIES	1,558,740
VEHICLES	3,627,995
WATER TENDERS	5,608,950
LOGISTICS/SUPPORT	**48,711,554**
INDIRECT SUPPORT SUB-TOTAL	**$65,403,173**
ESTIMATED TOTAL SUPPRESSION COSTS	**$141,047,987**

**All costs are from eIsuite, the tool used to track and oversee costs related to wildfires for the Federal Government. These are estimates only, until such time direct accounting reports from all jurisdictional agency financial systems can be confirmed, usually years after the end of a wildfire.*

OTHER OBSERVATIONS

Additional observations have been identified that do not rise to the level of formal findings but provide relevant context for understanding the Dragon Bravo Fire incident and the operational environment in which it occurred. These observations reflect patterns noted across interviews, documentation review, and technical analyses.

Gaps In Early Documentation And Information

The review team noted variability in the consistency, detail, and completeness of early incident documentation, including radio logs, dispatch entries, and DO notes. While available records were sufficient to reconstruct the overall event timeline and decision windows, gaps in early documentation limited precision in reconstructing informal communication exchanges and resource request pathways prior to July 14. These limitations did not materially affect the review's conclusions but underscored the importance of consistent documentation protocols during incidents.

Concessionaire Non-Participation and Resulting Information Gaps

The concessionaire responsible for operation of the Grand Canyon Lodge did not provide requested documentation or make personnel, aside from the manager, available to the review team. As a result, the review team could not fully assess concessionaire preparedness, evacuation communication processes, visitor and/or internal staff accounting measures on July 11 through July 12.

This limitation did not impede the review team's ability to evaluate NPS and USFS actions, but it prevented a comprehensive assessment of some concessionaire-specific roles and responsibilities during evacuation and early response.

Executive Order 14308 and Secretarial Order 3448

During the timeframe the SWFR was conducted, the DOI and its partner agencies were undergoing a period of significant change in how the federal government organizes the management of wildland fire. On June 12, 2025, the President issued Executive Order 14308, Empowering Commonsense Wildfire Prevention and Response, which directed the Departments of the Interior and Agriculture to streamline and consolidate federal wildland fire programs, strengthen intergovernmental coordination, modernize wildfire response capabilities, and remove regulatory and bureaucratic barriers that impede effective wildfire prevention and suppression. The Executive Order emphasized risk-informed decision-making, improved readiness, expanded use of technology, enhanced fuel management, and greater efficiency in federal wildfire governance.

In response to this direction, on January 12, 2026, the Secretary of the Interior issued Secretarial Order (SO) 3448, Establishment of the U.S. Wildland Fire Service, which initiated the creation of the USWFS. SO 3448 established the framework for unifying DOI wildland fire functions, personnel, and capabilities into a single organization, with the intent of improving operational effectiveness, consistency, and coordination across wildfire programs. SO 3448 also directed organizational realignments, workforce transitions, and the development of new governance, policy, and operational structures to support the USWFS mission.

At the time this review was conducted, the DOI was actively executing these directives, including personnel realignments and organizational changes associated with standing up the USWFS. Given the scope and complexity of these efforts, it is reasonable to anticipate that additional policy, procedural, and organizational changes related to federal wildland fire governance will continue to evolve beyond the completion of this report.

Accordingly, this review does not attempt to forecast or anticipate future policy or organizational outcomes associated with the establishment of the USWFS. The findings and recommendations are grounded in the organizational structures, authorities, and policies in effect during the period under review. References in this report to specific agencies, organizations, or roles, particularly those related to wildland fire leadership, governance, and operations, should be interpreted as applicable to equivalent or successor entities as federal wildland fire organization(s) continue to evolve.

CONCLUSION

The Dragon Bravo Fire represents a defining event for GRCA and a consequential case study for the DOI and the USWFS. What began as a small, naturally ignited fire rapidly evolved into a high-consequence, cross-boundary incident that tested leadership, governance, preparedness, decision quality, and execution across multiple programs and agencies. The resulting loss of historic structures, displacement of NPS and concessionaire employees, firefighter exposures, and substantial financial cost underscore the stakes associated with wildfire management in complex landscapes.

This review did not identify a single decision, action, or individual as solely responsible for the outcome of the Dragon Bravo Fire. Instead, the findings consistently point to more systemic weaknesses: misalignment between authority and physical presence, erosion of NIMS discipline, insufficient delegation and decision documentation, gaps in preparedness for WUI conditions, and inconsistent translation of national intent into operational practice. These weaknesses were compounded under time compression, rapidly changing fire behavior, and competing regional fire demands.



August 13, 2025: Dragon Bravo Fire as seen from Point Imperial within GRCA.

At the core of these issues was a breakdown in decision governance. In many cases, systems existed, but were not followed, and critical lines of communication between operations and decision makers were not effective. AA roles were not consistently aligned with qualifications, availability, or the operational tempo of the incident. Delegations of authority did not keep pace with strategy changes or command transitions. Informal decision pathways substituted required ICS structures, delaying or preventing timely authorization of suppression tools and tactics. National direction regarding fire posture was communicated, but was not reliably accepted, acknowledged, or documented on site, creating ambiguity about expectations. Collectively, these conditions reduced the organization's ability to adapt as risk escalated.

The Dragon Bravo Fire also revealed fire preparedness is only as effective as its integration. Structural fire protection, wildland fire response, facilities, utilities, safety, and concession operations did not function as a unified system when the fire entered the North Rim developed area. Previous program assessments identified deficiencies in defensible space, water system readiness, HAZMAT planning, inspection and maintenance, and corrective action tracking which were not resolved prior to the fire season. When tested under extreme conditions, these gaps narrowed response options and increased risk to responders and the public.

Despite these challenges, the review also observed professionalism, dedication, and commitment to life safety by responders and employees operating under extraordinarily difficult circumstances. Visitor evacuations were completed without reported injuries, structure protection actions prevented even greater losses, and extended suppression, stabilization, and recovery operations were carried out over nearly three months. These efforts reflect the strength and resilience of the workforce, even when systems and processes did not fully support them.

The recommendations in this report are intentionally forward-looking and broadly applicable. While several findings are specific to GRCA, the larger underlying issues, AA qualification and support, delegation discipline, decision quality, interagency governance, WUI preparedness, occupational



July 18, 2025: Firefighters raise the flag at the North Rim developed area.

exposure management, evacuation accountability, and communications, are not unique to this incident or this park. They reflect challenges faced across fire management organizations as complexity, consequences, and public expectations continue to increase.

Implementing these recommendations will require more than procedural updates. It will require sustained leadership attention, clarity of authority, disciplined adherence to national systems, and a commitment to closing the gap between policy and practice. Doing so will strengthen the ability of all agencies to make timely, risk-informed decisions; to protect life, firefighters, and the places and resources that are irreplaceable to Americans; and to maintain public trust during future wildfire events.

This report should serve not only for corrective action at GRCA, but as a catalyst for broader institutional learning and modernization across wildland fire.

APPENDICES

A. Timeline
B. Dragon Bravo Fire Maps
C. Compliance Findings
D. Outline – Major Themes, Findings and Recommendations
E. Dragon Bravo Fire SWFR Acronym Glossary